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**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

**AIR FORCE PAMPHLET 32-1003, VOLUME 4
AUGUST 1998**



Civil Engineering

**WORKING IN THE RESOURCES FLIGHT
MANPOWER MANAGEMENT**

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OPR: HQ AFCESA/CEOM (A. Jackson)

Certified by: AFCESA/CC (Col H. Dean Bartel)

Pages: 95

Distribution: F.

This volume in this pamphlet series describes the Air Force Engineer's role in activities required to develop, prepare, submit, and maintain a financial plan, budget estimates, and the Base Civil Engineer (BCE) financial management system; manage all manpower and personnel issues; operate and maintain of automation systems and support; and all activities related to real property accountability and reporting. The 32 series of Air Force publications contains USAF policy and procedural guidance for the Resources Flight. This volume provides detailed information for performing the Manpower mission. The manpower function is responsible for determination of unit manpower requirements, tracking and filling of manpower needs and any changes to the basic manpower set. This volume in this pamphlet also supports policy and guidance from HQ USAF/XPM, Air Force Center for Quality and Management Innovation (AFCQMI), and AFMAN 38-208, *Air Force Management Engineering Program (MEP)*.

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Chapter 1 Manpower and Organization Office

The Air Force (AF) attempts to support organizations' missions with manpower by objectively determining manpower requirements and systematically distributing manpower resources. The Civil Engineer is responsible for a large number of people in over 10 different specialties. The proper use of these resources ensures that the wing and squadron missions are efficiently and effectively accomplished.

This volume, part of AFI-32-1010, *Working in the Resources Flight* set, is designed to help resource managers determine their manpower requirements, track and fill manpower needs, and change the basic manpower set.

Patience is needed to help people as they work to align their manpower to best meet mission requirements. Managers must be sure to consider the long-term impact as well as short-term needs. The people in Manpower Management should be facilitators, not another obstacle.

The Resources Flight Air Force Manpower Standard (AFMS) is responsible for managing the civil engineer manpower process. In the core Resources Flight, about a half a man-year is allowed to manage the civil engineer manpower process. This means that at smaller bases, the Resources Flight chief will have to be a working supervisor. This area is of much concern to the entire squadron. Don't get caught not understanding the process.

The base Manpower and Quality office (MQ) exists to help every organization on the base with their manpower requirements. The MQ is part of the wing commander's staff. The MQ office provides commanders with integrated manpower and quality services. While the MQ is here to help, it also must be the watchdog, paying as close attention to manpower resources as the base comptroller does financial resources. A strong working relationship with the MQ, based on trust, ensures that the Civil Engineer's needs are met without wasting manpower resources.

The following are some of the services provided by the MQ office.

- The MQ office advises and assists local commanders and functional managers on effective management of manpower resources.
- They conduct management advisory (consultant) studies.
- Measurement inputs to the major command (MAJCOM) and AFMS are developed.
- Productivity enhancement studies are performed.
- A-76 cost studies are performed.
- Base functional managers are assisted with AF productivity programs.
- Variances are validated to manpower standards.
- MQ assists in the development of management decision packages to seek additional manpower requirements based on a new mission and workloads.
- Other manpower-related services, as determined by the installation commander and the MAJCOM, are provided.

Critical to the Civil Engineer (CE) mission is working effectively with the MQ. The Resources Flight can best work with the MQ by:

- being familiar with Manpower terminology, Manpower standards, the personnel system, and other Manpower related rules and information;
- developing a personal working relationship with the MQ personnel, especially those who work with CE issues; and
- being familiar with the Civil Engineer Air Force Manpower Standards and their application.

Chapter 2 Manpower Process Overview

2.1 Manpower vs. Personnel Process

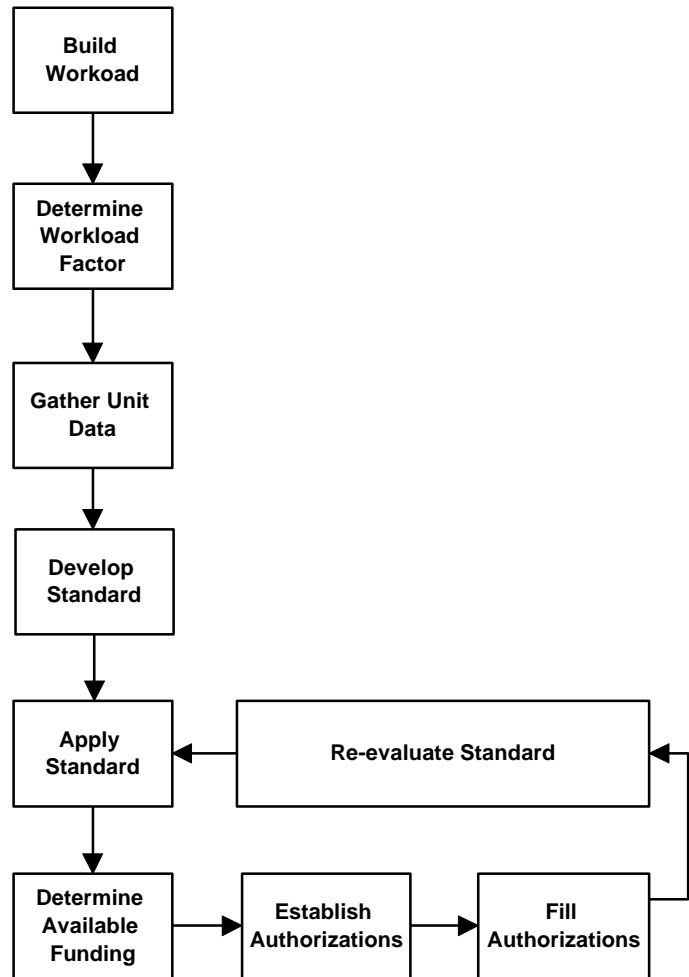
Understanding the overall manpower process and its associated terminology is important. Traditionally, the manpower process focused more on determining the requirement. The funding of the requirement was driven by the budget process and commander's needs.

This environment has changed significantly, in keeping with Congressional and Department of Defense (DoD) direction to downsize. The manpower process, itself, has not changed; however, the current emphasis is to re-engineer processes, outsource functions, and eliminate lower priority workloads to achieve the manpower objective to fully-fund all requirements. Thus, new workload and manpower requirements will be accommodated within available resources and approval levels of service.

Managers often make the mistake of confusing manpower and personnel. Manpower is responsible for the spaces, or positions, required to do the job. Personnel is responsible for the faces, or people, filling those positions. The two processes are managed independently, one by the manpower community and the other by the personnel community. Unfortunately, just because manpower determines a body is needed, doesn't necessarily mean personnel is going to fill that space.

Figure 1, Manpower Process, shows a number of the steps resulting in manpower requirements and, eventually, people. Of the steps shown in Figure 1 and explained below, only "Fill Authorization" is a personnel function. The remainder are the responsibility of the MQ office.

Figure 1. Manpower Process



2.2 Defining the Steps of the Manpower Process

Build a workload — A function’s workload must first be developed to determine what tasks are required and how long it takes to accomplish these tasks.

Even if it is known how long it takes to perform a function (in man-hours per month), it still must be determined how much work a person can do in a month to calculate how many people are needed. The Air Force has calculated a man-hour availability factor (MAF) for military and civilians.

Determine workload factor — In addition to man-hour requirements, the kinds of variables that might drive manpower requirements must be identified. Examples include

base square footage, number of base buildings, number of base housing units, and base population.

Gather data from other units — The man-hour requirements and workload data from many other bases help to build a representative database to develop or validate the model/standard.

Develop model or standard — This data is used to develop a manpower requirement model, called a standard.

Apply standard at units using the model developed — Using the model developed and the value of the workload factor at a given unit, man-hour and manpower requirements can be determined.

Standard:

$$Y = 100 + 100 X \text{ (man-hours/month)}$$

where:

X = millions of square feet of facilities

Example:

If a base has 2M square feet, this function would require:

$$Y = 100 + 100(2) \text{ or } 300 \text{ monthly man-hours}$$

Assuming the MAF is 150, the function would require $300/150 = 2$ people

Determine available funding — The defense budgeting process (PPBS) determines how many of required manpower authorizations can be afforded. Current policy is to fund manpower requirements at 100 percent, whenever possible.

Establish authorizations — Manpower authorizations are officially established with the appropriate grade levels and specialties.

Fill authorizations — The personnel system fills manpower-funded requirements.

Re-evaluate standard — Periodically, a function will be re-evaluated to determine its manpower requirements. Workload factor data, such as square feet, will simply be redetermined and the manpower requirement will be re-computed using the standard.

Chapter 3 Building a Workload

Proof of manpower needs is essential in today's limited resource environment. To determine a function's workload, three simple questions need to be answered.

1. What work is required?
2. How often is it required?
3. How much time is required to do it?

The answer to the question, "what work is required?" is usually a delineation of tasks required to perform a specific function. Tasks that are nice to have, but not required, can't be counted in a workload. A task must be justified based on mission, industry practice, and common sense.

If this concept were applied to a home, pet projects on which one works are probably not required tasks if the spouse doesn't believe they are necessary to the operation of a household.

Once what is required is known, the frequency of accomplishment must be determined. Following the household example, if a spouse says the bathrooms must be cleaned; the frequency of the task must be known before determining the magnitude of the task.

It's not enough to know what's required and how often it's required. It also must be known how long it takes to do the task, each time it is done. Back to the bathroom if the answer to "how often?" is twice a week; then, the length of time to complete the task must be determined. To calculate the workload, multiply "twice per week" by the length of time.

With a good idea of the required workload, the task of determining the number of people it takes to perform the work can begin.

Required, authorized, assigned, and unfunded are the four key terms relating to positions that must be understood in the discussion of manpower standards and management.

Required positions are exactly that, required. They are positions manpower standard says are needed to accomplish required tasks.

Authorized positions are those required positions that the Air Force is able to fund. These are often referred to as funded positions.

Assigned positions are those positions that have people filling them, they are handled by the personnel system.

Unfunded positions are those positions that are required, but not authorized, due to resource constraints.

Chapter 4 Contract Manpower Equivalents (CMEs)

4.1 Definition

Contract manpower equivalents are the portion of the workload that is required, but is accomplished by contract. *CMEs apply only to services-type of contracts.* CMEs are formally defined as the number of (in-house) manpower authorizations which are required if the contracted workload was performed at the same level specified in the contract.

4.2 Contracts

CE must monitor CMEs to determine the impact on in-service manpower requirements. Installation manpower offices review all:

- AF Forms 9, Request for Purchase;
- communications-computer systems requirements documents;
- AF Form 15, United States Air Force (USAF) Invoice; and
- delivery orders (to include Simplified Acquisition of Base Engineering Requirements [SABER]) for all service contracts to determine the impact on in-service manpower requirements, to compute CMEs, or adjust previously computed CMEs.

4.3 AFMS

The CE AFMSs provides instructions on computing CMEs. Certain civil engineering workload has been cost compared or contracted and is not covered by this standard. This work includes grounds maintenance, refuse collection, and family housing maintenance. Other work is traditionally contracted out and is not included in this standard. This work includes railroad maintenance; construction of roads; major roof repairs; custodial services; grease/oil traps, duct, tank, and sewer cleaning; appliance maintenance; office equipment and computer maintenance; lifting device maintenance (elevators); and sanitary landfill operations.

The above work may be accomplished by contract without CMEs offset of earned manpower.

If any of the above work is performed in-house, positive mission variances must be developed to credit the flights with authorizations required to perform the work. If the work has been cost compared, the variance will be the in-house bid or the civilian authorizations MES Coded "S" on

the UMD to perform the cost-compared work. The AFMS contains positive variances for most of the other contracted work not contained in the core.

Determining contract man-hour equivalents for non-A-76 contracted work is a complex task that requires selective judgment to decide if adjustments (negative variances) to the flight man-hours are warranted.

If an entire process or series of processes are contracted and it is determined that a negative variance is required, the following instructions can be used to determine the variance:

1. Determine the core process fractional manpower requirements that were contracted by identifying the contracted process(es) listed in the Process Analysis Summary.

For example, assume alarm maintenance and repair was contracted in the Infrastructure Support Element. This equates to three core manpower requirements. The Operations Flight core manpower requirement is 159.

2. Determine the percentage of the cost-compared process to the total flight core process man-hours.

In this example, it equates to 1.89 percent (3/159). **This step is necessary** because the cost-compared process man-hours are imbedded in the core +/- manpower equation.

3. Price the core +/- manpower equation.

For example, assume the core manpower requirement at a given location is 154.01 fractional manpower requirements.

4. Determine the negative variance manpower by multiplying the fractional manpower result (154.01) by the contracted process percentage (.0189).

For example, $154.01 * .0189 = 2.911$.

Chapter 5 Main Attributes of a Manpower Position

If a manpower standard says a person is required, not just any person will do. A mess attendant with 18 years of service can't do the work of an apprentice plumber. Each manpower position has a number of attributes attached to it, relating to the quality of the person required to perform the tasks. Not an exhaustive list, they are the main qualities dealt with in CE in managing manpower. The Unit Manpower Document (UMD) discussed in this chapter provides detailed information on positions.

5.1 Quantity

A manpower position is used to show the requirement for the person to fill the position. Each authorization is for one person.

5.2 Skill

One of the most important attributes of a manpower position is the required skill. The code the Air Force uses to identify skills is called the Air Force specialty code (AFSC). For officers, the code has four characters plus a suffix and an optional one-character prefix. Enlisted AFSCs are five characters.

The nature of the Civil Engineer mission requires a large number of skills. Many of these skills are craftsman trades.

Table 1, CE Officer AFSCs, summarizes the CE officer AFSCs and Table 2, Enlisted AFSCs, summarizes the CE enlisted AFSCs and other enlisted AFS common to CE units.

The manpower process assigns required AFSCs to manpower positions. The personnel process uses many classes of AFSCs associated with personnel. They include the primary, secondary, duty, and control AFSCs.

The primary AFSC is the AFSC assigned to an individual as the primary skill based on training, experience, and other qualifications. The primary AFSC is used for promotion purposes in the enlisted ranks. Those with the same primary AFSC will compete for promotions.

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Working in the Resources Flight

Table 1. CE Officer AFSCs

AFSC	Description	AFSC	Description
32E4	Civil Engineer - MAJCOM or above	32E3K	Civil Engineer -EOD (non-engineer)
32E3A	Civil Engineer - Architect	32E1A	Civil Engineer - Architect (entry level)
32E3B	Civil Engineer - Readiness	32E1C	Civil Engineer - Civil (entry level)
32E3C	Civil Engineer - Civil	32E1E	Civil Engineer - Electrical (entry level)
32E3D	Civil Engineer - Readiness (non-engineer)	32E1F	Civil Engineer - Mechanical (entry level)
32E3E	Civil Engineer - Electrical	32E1G	Civil Engineer - General (entry level)
32E3F	Civil Engineer - Mechanical	32E1H	Civil Engineer - EOD (entry level)
32E3G	Civil Engineer - General	32E1J	Civil Engineer - Environmental (entry level)
32E3H	Civil Engineer - EOD	32E1K	Civil Engineer - Non-engr Degree (entry level)
32E3J	Civil Engineer - Environmental		
Note the "C" prefix for commander is the only prefix that applies to the CE officer AFS.			

Table 2. Enlisted AFSCs

AFSC	Description	AFSC	Description
3E000	Civil Engineer Manager	3E4X2	Liquid Fuels Systems *
3E090	Electrical Superintendent	3E4X3	Environmental (Pest Management) *
3E0X1	Electrical Systems *	3E5X1	Engineering
3E0X2	Electrical Power Production *	3E6X1	Operations Management **
3E1X1	Heating, Air Conditioning and Refer	3E700	Fire Protection Manager
3E2X1	Pavements and Construction Equipment	3E7X1	Fire Protection
3E3X1	Structural	3E800	Explosive Ordnance Disposal Manager
3E490	Utilities System Superintendent	3E8X1	Explosive Ordnance Disposal
3E4X1	Utilities Systems *	3E9X1	Readiness
Notes:			
1. Bold X = Skill level 1, 3, 5, 7, 9 (explained later)			
2. *No 9-level for this specialty			
3. **No 5-level for this specialty			

The secondary AFSC is an individual's secondary skill. For example, an officer may have the primary AFSC of a B-52 pilot(11B3C) and, also, be a fully-qualified Civil Engineer officer (32E3G). This is a secondary AFSC.

The duty AFSC is the AFSC of the manpower position that the individual currently holds. This AFSC is the one that appears on a military member's performance report (OPR/EPR).

The control AFSC is the AFSC that the Air Force Military Personnel Center (AFMPC) uses to make assignments and

reassignments. This AFSC will be the same as either the primary or secondary AFSC.

5.3 Skill Level

After determining what skills are required, the level of these skills must be determined. To identify skill levels, the Air Force has developed skill level codes. The skill level code is actually contained in the AFSC, as seen in Tables 1 and 2. The identification of skills is different for officer and enlisted positions.

5.3.1 Officer Skill Levels

Usually, there are only two levels of skill for entry level and fully qualified officers.

In the officer AFSCs, a 32E1X (X is the suffix) indicates an entry level position. An officer on active duty in the CE career field receives the entry level AFSC.

A 32E3X (X is the suffix) indicates a fully-qualified officer position. Attendance at the Initial Skills Training and two years in the career field are required for upgrade to the fully-qualified level. A 32E4 (no suffix) indicates a fully-qualified officer position.

5.3.2 Enlisted Skill Levels

Enlisted skills and the skill-upgrade process is much more formal than the officer system for Civil Engineering specialties. The skill level of a position can be identified by looking at the fourth character of the enlisted AFSC. This number (1, 3, 5, 7, 9, 0) represents the skill level.

5.3.2.1 Trainee

1-skill level – Trainee. An airman entering initial skills technical training after completion of basic training and meeting specialty qualifications for the Air Force Specialty (AFS) as listed in AFMAN 36-2108, *Airman Classification*, receives the 1-skill level. This airman is not yet able to complete the basic tasks required by the skill. No base level units have 1-skill level positions. If the airman is disqualified or retrained, the 1-level is removed.

5.3.2.2 Apprentice

3-skill level – Apprentice. An airman who completes an AFSC-awarding course listed in AFCAT 36-2223, *USAF Formal Schools*, (i.e. technical school) and meets the other requirements of the specialty description in AFMAN 36-2108, receives the 3-level. The apprentice is only familiar with a few of the required tasks and must work under supervision.

5.3.2.3 Journeyman

5-skill level – Journeyman. An airman receives the 5-level if that airman:

- is satisfactorily performing in 5-skill level upgrade training (on-the-job training (OJT)),
- successfully completes all training requirements,
- passes 5-skill career development course (CDC) examination appropriate to the AFSC,
- is recommended by the supervisor, and
- meets mandatory requirements in the specialty description in AFMAN 36-2108. The journeyman knows required tasks well and can work unsupervised; however, the journeyman's knowledge of supervisory tasks may be limited.

5.3.2.4 Craftsman

7-skill level – Craftsman. An airman receives the 7-level if that airman who:

- satisfactorily performs in 7-skill level upgrade training,
- completes all training requirements,
- is a SSgt or above,
- is recommended by the supervisor,
- completes the 7-skill level AFSC awarding course, and
- meets mandatory requirements in the specialty description in AFMAN 36-2108,
- The craftsman is a master of all tasks, can provide technical information, and provides the best front-line supervision of other airman in that specialty.

5.3.2.5 Superintendent

9-skill level – Superintendent. An airman who receives the 9-level:

- is satisfactorily performing in the AFSC,
- is a SMSgt;
- possesses a 7-skill level AFSC (the normal input source into 9-skill level AFSC),
- completes all training requirements,
- completes the Senior NCO Academy,
- is recommended by the supervisor; and
- meets mandatory requirements in the specialty description in AFMAN 36-2108,

The superintendent provides broad career-field expertise. Technical familiarity with lower level tasks may not be current.

5.3.2.6 Chief Enlisted Manager (CEM)

0-skill level – Chief Enlisted Manager (CEM). An airman who is a chief master sergeant (CMSgt) or CMSgt select and has 9-skill level feeder AFSC (input source into CEM code) receives the CEM code (0 level). Chiefs are used as the local commander sees fit. Many serve as BCE advisors, while others manage some aspect of the Operations Flight.

Determining required grades for positions is actually quite simple, as long as required skill levels are known. Table 4, required skill levels/grade, summarizes what skill levels require which grades.

The personnel system does the best it can to match the required grade of a position when assigned personnel. It isn't always an exact match. A senior airman (SrA) can fill a staff sergeant (SSgt) position.

Table 3. Required Skill Levels/Grade

Required Skill-Level	Authorized Grade						
	A1C	SrA	SSgt	TSgt	MSgt	SMSgt	CMSgt
3-skill level	X						
5-skill level		X	X				
7-skill level				X	X		
9-skill level						X	
CEM code							X

5.4 Educational Requirements

Officers can have a specific academic degree specialty specified, as well as the level of education (i.e., Masters or Ph.D.).

An academic specialty code (ASC) identifies the type of degree program. The ASC (sometimes called ASF) is a four-character code. All CE officer positions requiring an advanced degree will be coded 1AGY. Each position also has an advanced education level code that identifies the level of education. Common ASC CE examples are found in Table 5, ASF Codes and Titles.

Table 4. ASF Codes and Titles

ASF	Title	ASF	Title
1AGY	Engineer Management	4IEY	EE Energy Con/District
2CAY	Architecture	4IYY	Electrical Engineer
4DAY	AE City/Reg Plnr	4LCB	IE Human Factors
4DYY	Architectural Engineer	4LYY	Industrial Engineer
4HEY	CE Sanitary	4MIA	ME Thermal/Heat
4HBY	CE Soils & Found	4MY Y	Mechanical Engineer
4HYY	Civil Engineer	4YYY	Engineering

To determine requirements for advanced academic degree positions, the following criteria should be considered:

- primary duties require qualifications usually acquired through a graduate education in a relevant field;
- the responsibility for evaluating complex programs in a specific field of study;
- a high order of job complexity;
- the need for innovation in state-of-the-art technology and its application;
- the integration of complex systems or disciplines;
- special training and education only available through graduate programs;
- abilities not usually developed through the pursuit of a baccalaureate degree, participation in continuing education, or experience; and
- essential qualification for effective relationships with counterparts in other government agencies, private industry, and the education sector.

Validation should be documented on AF Form 1779, *Request to Establish/Change Advanced Academic Degree Position*. The functional manager, (manager requiring an advanced-degree position) initiates the action and forwards the form to the local manpower and organization office.

5.5 Funding

The program element code (PEC) links the manpower position to the Planning, Programming and Budgeting System. The PEC is a five-digit number, followed by an alphabetic suffix. The number identifies the program and the suffix gives further program detail to high-level headquarters. The X's in Table 6, CE PECs, show the variation among bases.

The base manpower and organization office can provide a list of current suffixes used on the program element code for manpower purposes.

Table 5. CE PECs

PEC	Description
XXX98	Management Headquarters
XXX78	Real Property Maintenance & Repair
XXX79	Real Property Services
XXX56	Environmental Compliance
XXX54	Pollution Prevention
XXX53	Conservation
78008	Defense Environmental Restoration Account (DERA)

Chapter 6 Air Force Manpower Standards

The source document for any unit's manpower requirement is a specialized, numbered publication called a manpower standard. Standards common to a wide range of bases across commands are called AFMSs. Other requirements, peculiar to any MAJCOM, are called MAJCOM manpower standards and may be published as a command standard or as a supplement to an existing AFMS. The AFMSs contain a quantitative expression, usually in the form of an equation, of a monthly, man-hour requirement based on varying levels of workload. The standards also contain detailed and specific information pertaining to the work center.

The Air Force has developed a manpower standard for each function, identified by a unique Functional Account Code (FAC). Each civil engineer flight relates directly to the appropriate FAC. Table 6 provides a list of CE AFMSs.

Table 6. CE AFMS

AFMS # (FAC)	Flight
44EF	Fire Protection
44EB	Readiness
44EC	Engineering
44ED	Explosive Ordnance Disposal
44ER	Resources
44EO	Operations
44EV	Environmental
44EH	Housing

It's important for all flight managers, not just the Resources Flight chief, to understand from where their manpower requirements come and what the standards state should be their job.

It's also very important for the Resources Flight chief to be familiar with all the CE AFMSs because manpower management is a Resources Flight responsibility. Reference Resources Flight AFMS (AFMS 44ER). Thus, the BCE will expect the Resources Flight chief to be the manpower expert. In other words, Resources Flight (CER) is manned to do it. Detailed knowledge of the AFMS is critical when the

standard is to be re-applied by recalculating the man-hour requirement based on any changes in workload.

6.1 Components

Even though each manpower standard is unique, each must follow a general format. The AFMS usually contains information about the functions, mission, core composition, manpower equation(s) and variances, as well as several attachments. There are several common components of a generic CE AFMS.

Mission Statement — The mission statement gives a general description of the function's purpose and what major categories of work are that function's responsibility.

Authority — This section lists Air Force publications that contain USAF policy and directives that guided the development of the standard.

Applicability — This section describes to what types of organizations the standard is applicable. Usually, it will state the standard applies to all functions organized to support an objective wing. This section will also list the MAJCOMs to which the standard does and does not apply. For example, the Applicability section of the AFMS 44EV states it is not applicable to AFMC.

Core Composition — In developing the current manpower standards, analysts used a core base and squadron as a baseline in determining what tasks are required (see Table 7, Profile of Core Objective CE Squadron). This section of the AFMS gives both the core manpower requirement and a range of requirements for bases that may be larger or smaller than the core.

The Standard Data section of the AFMS provides the technical basis of the standard and the actual man-hour equation with workload factors.

Manpower standards relate manpower requirements to workload volume. The methods used to develop a standard can vary in complexity and formality.

Table 7. Profile of Core Objective CE Squadron

Area	Description
Base data	4000 acres 3000 jobs (2688 military, 312 civilian) 72 primary aircraft assigned (fighter-type) 4800 population served, includes dependents 800 family housing units, no leases 1 runway with taxiway and apron 2.5M sq ft buildings, includes 1M sq ft housing 2.5M sq yd pavements water and wastewater facilities; chlorination, industrial, separators, and lift stations CONUS location, temperate climate 20-bed health clinic no ranges, railroads, central heat or cooling, water treatment, or wastewater treatment plants 50 emergency generators purchased electric power purchased municipal water supply and wastewater treatment
Fiscal resources	\$0.8M family housing maintenance contract \$2.7M annual project contracts \$0.5M service contracts \$1.6M materials and supplies \$2.2M other resources support; misc. services, purchased utilities, equipment rental, travel fully-funded payroll
Contract services, no in-house capability	family housing maintenance custodial services refuse collection grease/oil trap, duct, tank, sewer cleaning grounds maintenance exterior and interior painting hangar door maintenance appliance maintenance office equipment and computer maintenance lifting device maintenance; elevators, hoists SABER
Contingency capability	bare base with 2000 personnel supports 1 independent and 1 dependent squadron to the same location, small aircraft only 3 crater repair Force beddown and sustain operations CONUS sustaining force not addressed

Area	Description
CE Squadron assumptions	<p>Objective squadron, 8 flights</p> <p>DMRD 967 initiatives implemented:</p> <ul style="list-style-type: none"> • zonal maintenance • multi-skilled military workforce • cradle-to-grave project management • streamlined, production-oriented organization • maintenance engineering <p>new unit type codes (UTCs) implemented</p> <p>no squadron section commander</p> <p>1 O-5 commander and 1 E-9</p> <p>furnishings management not provided</p> <p>government operated civil engineer supply store (GOCESS)</p> <p>Work Information Management System (WIMS) implemented</p> <p>squadron-authorized manpower equals required manpower</p> <p>authorized manpower 100% filled</p>

The **approval date** is the date the standard was approved by the Air Force Center for Quality Management Innovation in coordination with the Air Force Civil Engineer.

The **man-hour data source** lists the source(s) of the man-hour data used in developing the standard. Examples include operational audits, time studies, workshops, and historical data.

Standard **man-hour equations** are shown. Some standards have more than one equation, others may have look-up tables.

The **workload factors**, along with the exact location of the data, are listed in this section. Workload factors are usually expressed as "X" variables. For example, X1 = total base population and X2 = total square feet of floor space. The standard is specific about what data to gather.

The **application instructions** very clearly explain how to compute man-hours and, then, manpower (people) requirements. A manpower specialist isn't needed to compute manpower requirements; the new AFMSs do a good job of explaining the process.

The **statement of conditions** defines the parameters wherein the AFMS was developed. The purpose is to communicate allowed environmental conditions, standards of

living, initiatives, etc. This section may also list work not include in the AFMS.

Attachments — Most AFMSs have several attachments. These provide more detailed information on the function and its manpower requirements.

The process description is a useful tool for functional managers. It lists all processes for which the standard gives manpower. This is the it's-not-my-job tie-breaker section. Who is responsible for a certain process is whoever is getting the manpower for the task. More importantly, the process description is used to determine if an organization is doing a lot of things that are not required. An example of a part of a process description is found in Figure 2, Sample Process Description.

Figure 2. Sample Process Description

Process Description	
HOUSING FLIGHT	
1.	Military Family Housing (MFH) Assignment and Termination
1.1.	Assists in the preparation and processes housing applications
1.2.	Provides on-base housing waiting list
1.3.	Counsels personnel on housing options

In computing manpower requirements using equations, only the number of people (quantity) is known, not what kind of people (quality).

The determination of what grades and skills are needed are found by entering the bottom row of the standard manpower table which shows number of people earned.

The column is followed up to find the break-out on what types of people are earned. This is shown in Figure 3, Using the Manpower Table.

Figure 3. Using the Manpower Table

CE Officer, Civil Engr	32E3C	CPT	1	1	1	1	1	1	1	1	1	1	1
CE Officer, Elect Engr	32E3E	CPT	1	1	1	1	1	1	1	1	1	1	1
CE Officer, Mech Engr	32E3E	CPT	1	1	1	1	1	1	1	1	2	2	2
CE Officer, General Engr	32E3G	CPT			1	1	1	1	1	1	1	1	1
Engineering Superintendent	3E591	SMS											
Engineering Craftsman	3E571	MSG							1	1	1	1	1
Engineering Craftsman	3E571	TSG	1	1	1	1	1	1	1	1	1	2	2
Engineering Journeyman	3E551	SSG	1	1	1	2	2	2	2	2	2	2	2
Engineering Journeyman	3E551	SRA		1	1	1	2	2	2	2	2	2	2
Engineering Apprentice	3E531	A1C									1	1	1
TOTAL			5	6	7	(8)	9	10	11	12	13		



Variances, explained in more detail later in this chapter, are workload differences that occur only at some locations. The best example of a variance workload is snow removal. Variances are attached to the standard for easy reference.

As shown in Table 8, Process Analysis Summary, the summary is one of the most useful management tools in the AFMS. The process analysis summary lists major categories of tasks and the associated workload for a core base in priority order. It is also the order the Air Force uses to state a function should be completing its tasks. An example is given below.

Table 8. Process Analysis Summary (Priority Order)

HOUSING FLIGHT		
Process Title	Average Process Accomplishment Time in Man-hours (mh)	Projected Workload
Assignments and Terminations	16.87 mh	360 units/year
Quarters Maintenance	6.86 mh	360 units/year
Housing Referral Assistance	5.27 mh	66 customers/month
Complaint Mediation	4.29 mh	20 complaints/month
General Officer Quarters Cost Report	22.20 mh	1 report/quarter
Housing Requirements	35.52 mh	1 report/year
Commanders' Interest Program	67.49 mh	5 programs/year

Any other information concerning the standard and its development and application would be included as attachments.

6.1.1 *Variances*

Variances are significant changes in tasks or workload as compared to the core base concept. Variances resolve the complaint that manpower standards are unfair because a base is unique. Variances help account for some unique situations at bases.

They are important to understanding the workload at a base; understanding variances will help in understanding the differing circumstances at different bases.

Additive variances include both additional tasks and additional workloads. Snow removal is an excellent example of an additive variance.

A negative deviation occurs when a particular bases does not accomplish the required work

Variances are usually added or subtracted from the total man-hour requirement using the equation:

$$Y = \{\text{mpwer_equation}\} \pm \text{variances}$$

6.1.2 *Development*

The manpower standard developers determine who receives variances and how many man-hours a variance is worth. Usually, the work group determines man-hour requirements by answering what is required, how often, and how long it takes each time.

The formal method of identifying manpower variances is to submit a letter to the manpower and quality office. The request should be coordinated with the MAJCOM CE staff. They will, eventually, be asked to evaluate the request. A request should include the answers to what is required, how often, and how long it takes each time.

The variance attachment in the manpower standard contains both the approved variances and the disapproved variances. A variance on the disapproved list means the variance was determined to not be valid, Reasons for the disapproval were resource limitations, work considered to be in the core or other variances, work normally contracted, work not the

responsibility of the Base CE, and work considered to be at a standard higher than an acceptable level. Related work processes are not prohibited, but when required, must be accomplished within available resources.

6.2 Man-hour Availability and Overload Factors

As discussed earlier, it's not enough to just know how many man-hours are required to perform the mission. How many man-hours a person can work to be able to determine how many people are required must also be known.

6.2.1 Man-hour Availability Factor

To facilitate the above process, the Air Force has developed the man-hour availability factor. It is defined as the average number of man-hours per month an assigned individual is available to do primary duties. Application of most manpower standards produces an average monthly man-hour requirement. To convert the man-hour requirement to manpower requirements, divide man-hours by an appropriate MAF. (See Table 9, Current MAFs and Their Derivations and Table 10, Special AF Workweeks and MAFs.)

Table 9. Current MAFs and Their Derivations

Standard Workweek									
	Normal: 5 days, 8-hour day, 40-hour week			Extended Overseas: 6 days, 8-hour day, 48-hour week		Wartime Emergency: 6 days, 10-hour day, 60-hour week		Wartime Surge: 6 days, 12-hour day, 72-hour week	
Computation of Assigned Hours									
Calendar Days/month	30.4375			30.4375		30.4375		30.4375	
Less									
Holidays	.8333			.8333					
Relief Days ¹	8.6964			4.3482		4.3482		4.3482	
Assigned Days	20.9078			25.2560		26.0893		26.0893	
Hours a Day	X 8			X 8		X 10		X 12	
Monthly Assigned Hours	167.26			202.05		260.89		313.07	
	Mil ² Civ ³			Mil Civ ⁴		Mil Civ		Mil Civ	
Non-available Categories		CONUS	Over-Seas						
Leave	10.90	12.76	9.45	9.58		5.80	11.21		
PCS Related	1.01			1.92		1.40			
Medical (Sick Leave)	1.96	5.25	3.62	2.05		2.40	6.40	2.31	4.39
Organizational Duties	1.09			1.27		2.70		1.11	
Education & Training	2.89	0.76	0.38	1.46		0.50	0.18		
Social Actions	n/a			n/a		0.10			
Miscellaneous	0.22			0.06		0.30		0.52	

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Working in the Resources Flight

Special Absences ⁵		0.52	0.79				0.39		
Total Non-available Hours	18.07	19.29	14.24	16.34		13.20	18.18	3.94	4.39
Monthly Hours Available to Primary Duty ^{6, 7}	149.2	148.0	153.0	185.7		247.0	243.0	309.0	309.0
Notes: 1. Saturday, Sunday, or compensatory weekday for weekend workday. 2. Applies to all CONUS and overseas locations working a normal, 40-hour workweek. 3. Alaska and Hawaii are included in the CONUS civilian computation. The civilian MAF also includes United States Code Title 32, civilians assigned to Guard and Reserve units. 4. There are currently no locations in the world where US direct hire civilians are working an extended workweek. 5. Special absences for civilians include registration or voting, blood donations, military funerals, etc. 6. Monthly MAF to be used for manpower computations. 7. The MAFs for Wartime Emergency and Wartime Surge have been rounded to the nearest whole number.									

Table 10. Special AF Workweeks and MAFs

	Workweek (hours)	Monthly Man-hour Availability Factor	Year Approved
Firefighters	72	283.0	1993
USAF Academy Faculty	45	178.4	1992
Foreign National (FN) Civilians (by country)			
Germany			
Rheinland-Pfalz	38.5	126.31	1991
	40-43	138.07	1991
	43.5-47	153.16	1991
	48-50	166.18	1991
	51-55	184.75	1991
	44-50 (6-day work-week)	156.68	1991
Hessen	38.5	127.0	1991
	40-45	147.62	1991
	47-54	171.32	1991
	48-51 (6-day work-week)	166.71	1991
Berlin	38.5-40	132.5	1991
	41.5-43	145.36	1991
	47	164.79	1991
Fire Protection	58.88	208.47	1991
Greece	39	139.62	1985

	Workweek (hours)	Monthly Man-hour Availability Factor	Year Approved
	40	142.86	1985
	42	152.95	1985
Italy	40	136.5	1987
	67.4	246.1	1987
	72	263.4	1987
Japan	40	149.0	1978
Korea	48	182.0	1978
Netherlands	38	125.5	1990
Philippines	40	149.0	1978
Portugal (Azores)	40	143.3	1979
	44	153.8	1979
Spain	40	139.6	1990
	72	275.15	1990
Turkey	45	148.6	1987
United Kingdom	39	143.31	1986

6.2.2 *Overload Factor (OF)*

The Air Force has also developed an overload factor to ensure effective use of Air Force manpower resources. The overload factor implements the concept that Air Force functions must work approximately 30 minutes per day per manpower requirement above the normal workday before earning an additional manpower requirement. Different workweeks have separate overload factors. The overload factor for the normal workweek is 7.7 percent; for the extended overseas workweek, 4.0 percent; and for the wartime emergency workweek, 1.2 percent. No overload factor is applied against the wartime surge workweek, firefighter, US Air Force Academy faculty, and foreign national civilian workweeks. To implement the overload factor, the OF is expressed as a number. For example, the OF for the normal work week, 7.7 percent, is expressed as 1.077, effectively adding 7.7 percent.

6.3 **Application and Re-application**

Manpower standards are usually applied (sometimes called “re-applied”) periodically as determined by the MAJCOM. The manpower requirements for each Functional Account are re-computed. The MQ will do the actual application, but their work should be closely audited. This computation is simple, if the instructions given in the AFMS are carefully followed. A general procedure follows for an all-military or all-civilian functional account. The standard equation used is:

$$Y = aX_1 + bX_2$$

Where: $X_1 = i$

$X_2 = k$

The AFMS is used to determine the data sources for the workload factor(s) (WLFs). The use of a spreadsheet to record the data gathered and make the calculation eases the task.

The AFMS equation with the WLF(s) results in core man-hour requirement:

$$Y = a * i + b * k$$

The total man-hour requirement is adjusted by adding and/or subtracting variances:

$$Y = a * i + b * k \pm \text{var}$$

The above result is divided by the MAF and overload factor:

$$\text{Manpower} = \frac{Y}{\text{MAF} * \text{OF}} = N.2$$

This result is rounded using the current rounding rules:

$$\text{Manpower} = N+1$$

The standard manpower tables in the AFMS are used to determine the appropriate skill and grade mix.

Table 11 summarizes how manpower requirements are computed when there is a military and civilian mix.

Table 11. Manpower Requirements for a Mixed Function

	ACTION	EXAMPLE
1	Compute basic AFMS man-hours. Include all variances. Sum the man-hours for the AFMS.	The sum of AFMS 42B1, Vehicle Maintenance, is 7331.49 man-hours. This example assumes an overseas location.
2	Subtract approved CME man-hours from the step 1 sum to determine total in-service man-hours.	The total in-service man-hours for FAC 42B1 is 7331.49; this Flight has no CMEs.
3	Determine the required military positions (includes military essential positions per AFI 38-204). If all positions must be military, then divide the total man-hours from step 2 by the military MAF times the overload factor. Round to the next whole number. If all positions are not required to be military, then go to step 4.	<p>ALL MILITARY:</p> $\frac{7331.49}{149.2 \times 1.077} = 45.63 = 46 \text{ military}$ <p>Only 26 positions must be military in FAC 42B1; go to step 4</p>
4	Compute military man-hours. Multiply the military positions determined in step 3 times the appropriate military MAF then multiply the result by the appropriate overload factor.	26 military X 149.2 (MAF) X 1.077 (40-hour workweek overload factor) = 4177.90 monthly man-hours
5	Compute total civilian man-hours. Subtract man-hours obtained in step 4 from in-service man-hours computed in step 2.	$\begin{array}{r} 7331.49 \text{ total man-hours} \\ -4177.70 \text{ military man-hours} \\ \hline 3153.59 \text{ total civilian man-hours} \end{array}$
6	Determine the required FN civilian positions. Convert to FN man-hours by multiplying by the appropriate MAF. Do not use any overload factor for FN civilians.	<p>There must be 8 FN civilian positions in FAC 42B1. The United Kingdom 39-hour MAF is used for this example.</p> $8 \times 143.31 = 1146.48 \text{ FN monthly man-hours}$
7	Compute United States direct hire (USDH) civilian man-hours. Subtract man-hours obtained in step 6 from man-hours obtained in step 5.	$\begin{array}{r} 3153.59 \text{ total civilian man-hours} \\ -1146.48 \text{ FN man-hours} \\ \hline 2007.11 \text{ total USDH civilian man-hours} \end{array}$
8	Determine USDH civilian positions. Go to step 9 if computed man-hours equal or exceed 956.38 (or more than 6 civilian positions) for CONUS locations or 988.69 for overseas locations. Divide by the sum of the appropriate USDH civilian MAF and overload factor if computed man-hours are less than the above. Round to the next whole number.	Computed man-hours exceed 988.69; go to step 9.

9	When USDH civilian man-hours equal or exceed 956.38 for CONUS locations or 988.69 for overseas locations, divide by the appropriate civilian MAF. If the fractional manpower requirement is less than .5, round to the last whole number. If the fractional manpower is .5 or greater, round to the next whole number.	$\frac{2007.11 \text{ USDH civilian man-hours}}{153.0} = 13.12 = 13 \text{ USDH civilians}$
10	Determine total positions. Sum positions obtained in steps 3, 6 and 8 or 9 (as appropriate).	26 military requirements 13 USDH civilian requirements 8 FN civilian requirements <u>0</u> CMEs 47 total requirements

6.4 CE AFMS

It's important for the Resources Flight to be very familiar with all the CE AFMSs. Table 12 summarizes the CE AFMSs.

The Civil Engineer administration function is covered under the generic squadron support standard. The workload factor is military personnel assigned. The MQ can be contacted for further details.

The manpower standards are the basic building blocks for manpower requirements. Working knowledge of these documents will ensure the right numbers and types of people are doing the right things.

Table 12. Summary of CE AFMSs

Flight	FAC	Workload Factors	Equation	Core	Remarks
Fire Protec- tion	44EF	None	$Y=55$	55	Negative variance for nonflying
Readiness	44EB	Authorizations requiring training	$Y=X/(1.091+.0004365X)$	8	Chemical warfare training big workload
Engineering	44EC	Square feet, age switch	$Y=(1853+.4594X_1+464.9X_2)$ *Adjustment factor	21	Adjustment factor phases in reductions
EOD	44ED	Primary aircraft authorized (PAA)	$Y=(X/\text{std wing size}) * (\text{aircraft equivalent factor}) * 1444.6$	9	Standard wing-size base on aircraft types
Resources	44ER	CE manpower minus resources	$Y=549.4+3.020X$	9	Very few variances
Operations	44EO	Weighted square feet, consolidated workload factor	$Y=(6221+11.44X_1+5292X_2)$ * Adjustment factor	159	Many variances for snow, manned plants, etc.
Environ- mental	44EV	Military & civilian base population, acres, buildings, PAA	$Y=724.2+.01077X_1+.003191X_2+.08972X_3+4.465X_4$	7	DERA employees not included; AFMC not covered
Housing	44EH	Total housing units	$Y=390.6+.7306X$	8	Furnishings management is a variance

Chapter 7 Managing Manpower Documents

Several documents are used to record manpower requirements, authorization, and assignments.

7.1 Air Force Manpower Standards

The AFMSs show manpower requirements. Although they change infrequently, the most important aspect of managing these documents is to have current ones. A significant part of manpower management is organization and data management. Detailed knowledge of what data exists and on what documents to find it is imperative to effective manpower management.

7.2 Unit Manpower Document

The UMD is a computer-produced record of manpower requirements, currently in the unit authorization file (UAF) on personnel's system. It comes in two versions, the UMD and the extended UMD (EUMD).

The UMD shows only funded manpower requirements, called authorizations. The EUMD shows both the funded requirements (authorizations) and the unfunded requirements (those earned in the standard but not authorized).

Using acronyms, abbreviations, and codes, the UMD shows an enormous amount of information on each position. The following terms are numbered 1 through 57, corresponding to UMD headers and titles.

1. **Personnel Accounting Symbol (PAS)** – an alphanumeric code representing a unit or detachment that has military personnel assigned.
2. **Organization number, kind, and type (NR-KD-TYP)** – specifies the unit's designation.
3. **Detachment Number (DET)** – if applicable; contact MQ.
4. **Operating Location Code** – identifies location of a detachment, if applicable; contact MQ.
5. **Installation Location Code (ILC)** – an alphabetic code identifies the exact location of the unit or installation in geographic coordinates. Examples include:
 - ZHTV - Wright-Patterson,
 - FNWZ - Dyess, and
 - PNQS - Maxwell.

6. **Installation Location Name (INSTL-LOC-NAME)** – installation name
7. **Installation Kind (ILK)** – identifies the installation based on its purpose.
Common ILKs include:
ADM - Air Force base
AFB - Air Force station, no aircraft operating area
ANX - annex
APT - airport
ASN - air station, air base no foreign territory
CTY - city
FHG - family housing
IAP - international airport
PRT - port, ships discharge cargo
RAF - Royal Air Force station
SCH - school
STG - storage (other than ammo, no depot function)
8. **Installation State or Country** – state or country location
9. **Organization Effective Date** – The fiscal year and fiscal quarter the unit is to become effective
10. **PAS Security Classification (PSC)** – the security classification of the unit; U - unclassified and C - classified.
11. **PAS Classification Reason (PSR)** – the rationale for classification. Examples:
A - organization location
B - organization nomenclature
C - organization and nomenclature
D - all matters pertaining to unit are classified
E - organization projected for deactivation
F - organization mission, equipment, etc.
G - for official use only
Y - not applicable (unclassified organization)
12. **Air Reserve Identity (ARR)** – used to identify reserve unit, contact MQ for examples.
13. **Installation or Location Indicator (UDC)** – indicates a unit that can be mobilized (“X”)
14. **Central Civilian Personnel Office (CCP)** – identifies the servicing civilian personnel office.
Examples:
AU - Andrews AFB, MD;
LK - Hanscom AFB, MA;
MG - Maxwell AFB, AL; and

WE - Wright-Patterson AFB, OH.

15. **Consolidated Base Personnel Office (CBP)**
(CURRENT) – identifies the servicing military personnel office; codes identical to 14.
16. **Management Engineering Team (MQ)** (CURRENT)
– identifies the servicing management engineering team; codes identical to 14.
17. **Sub-command Identity (SUB)** (CURRENT) – identifies a lower level of command, including detachments, etc; contact MQ for numeric code.
18. **Personnel Accounting Level (PAL)** (CURRENT) – identifies gaining MAJCOM when the unit is mobilized.
19. **Consolidated Base Personnel Office (CBP)**
(PROJECTED, if a unit is moving) – identifies the servicing military personnel office; codes identical to 14.
20. **Management Engineering Team (MQ)**
(PROJECTED) – identifies the servicing management engineering team; codes identical to 14.
21. **Sub-command Identity (SUB)** (PROJECTED) – identifies a lower level of command, including detachments, etc; contact MQ for numeric code.
22. **Personnel Accounting Level (PAL)** (PROJECTED) – identifies gaining MAJCOM when the unit is mobilized.
23. **Associated Pass Number (APN)** – identifies reserve associate unit whose members will be gained upon mobilization
24. **Organization Structure Code and Title (OSC AND TITLE)** – an alphanumeric code, two and seven characters in length; identifies the internal organization structure of a unit. The OSC is similar to an office symbol. Offices with codes AAB and AAC would report to AA, thus setting up an organization structure
25. **Position Number (POS-NR)** – the position number is a seven-digit, numeric code identifying a manpower requirement. The position number corresponds to the position numbers found on military and civilian rosters. The position number is the link between manpower and personnel.
26. **Assigning Major Command Identity (AMI)** – indicates major command of the position; always the same for all positions.
27. **Air Force Specialty Title (AFS TITLE)** – this code is like a duty (DTY) title; the AFSC title is listed. If an entry is made in the DTY column, then that corresponding duty title will be used. For example: Utility

Systems Cman - indicates a 7-level utility system position.

28. **Functional Account Code and Title (FAC AND TITLE)** – the FAC is a six-character field representing a homogenous grouping of tasks. Each FAC has a manpower standard.
29. **Air Force Specialty Code (AFSC)** – the five-character code represents the specific skill and skill level required for the position.
30. **Specialty Experience Identifier (SEI)** – identifies special experience and training not otherwise reflected in the classification system. SEIs are intended to complement, not replace AFSCs; consult with MQ or Military Personnel Flight for specific codes.
31. **Authorized Grade (GRD)** – the funded grade for the position; can be different from the grade earned in the standard. The following codes are used:
 - COL - Colonel,
 - LTC - Lt Colonel,
 - MAJ - Major,
 - CPT - Captain,
 - LT - Lieutenant,
 - CMS - Chief Master Sergeant,
 - SMS - Senior Master Sergeant,
 - MSG - Master Sergeant,
 - TSG - Technical Sergeant,
 - SSG - Staff Sergeant,
 - SRA - Senior Airman,
 - A1C - Airman First Class,
 - AMN - Airman, and
 - AB - Airman Basic.

CIV/Civilian* Many bases code all civilian as just civilian, and the actual grade is determined by the Position Description (PD). Some bases code the civilian positions with the appropriate grade using the codes below; 00 is actually the pay grade, like 05 or 11.

W00 - wage grade 00

S00 - wage supervisor 00

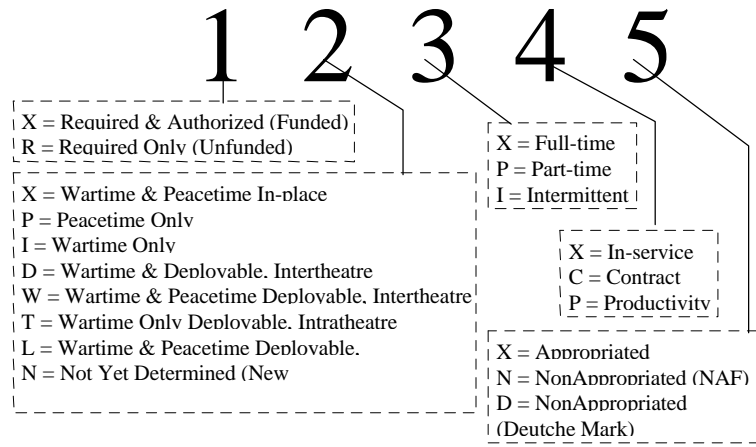
L00 - wage leader 00

G00 - general service 00

M00 - general manager

32. **Manpower Type (MNT)** – indicates the type of position. It is a five-character code, each character gives

further detail about the position; as shown in the following example:



33. **Authorization Effective Date (EFF)** – the effective date shows the fiscal year and quarter a position will become authorized or required or the fiscal quarter on the UMD, whichever is later.
34. **Authorization Through Date (TRU)** – the through date shows the last fiscal quarter a position is required. This shows positions that will be removed. A code of 999 indicates an indefinite position.
35. **Authorization Amount (AMT)** – one position number can actually represent more than requirement or authorization. The AMT indicates the number of requirements (1 to 9). Officer positions will always be 1.
36. **Required Grade (RGR)** – shows the grade the manpower requirement earns from the standard. Due to funding constraints, this grade may actually be higher than the GRD, authorized grade.
37. **Program Element Code (PEC)** – this six-character, alphanumeric code indicates the program element that funds the manpower requirement. This code links manpower requirements to the Future Years Defense Plan (FYDP) and the funding world. The final character of the PEC gives further detail on the mission. The XXX varies by base and the last character also varies. CE PECs are given in Table 6.
38. **Civilian Employment Category (CEC)** – identifies the type of civilian position based on grouping of pay plans, types of appointments, and authorities for appointments.

Codes include 10 - general schedule, 20 - wage grade, and 80 - contract man-year equivalent (CME).

39. **Academic Specialty Field (ASF)** – identifies academic education required in terms of an academic field or specialty. This code is only found on officer records. This code shares an area on the UMD with the occupational series (OCC) (see next item). Codes used in CE include:

1AGE - envir mgt
1AGY - engr mgt
2CAY - architecture
4DAY - AE city/reg plnr
4DYY - arch engr
4HEY - CE sanitary
4HFY - CE soils & found
4HYY - Civil engr
4IEY - EE engy con/dist
4IYY - Electrical engr
4LCB - IE human factors
4LYY - Industrial engr
4MIA - ME ther/heat
4MY Y - Mechanical engr
4YYY - Engineering

40. **Occupational Series (OCC)** – identifies the occupational series used by civilian personnel. This field shares space on the UMD with ASF, and applies only to civilian positions. Some examples include:

0301 - Clerical or admin
0303 - Clerk or assistant
0318 - Secretary
0801 - General engineering
0802 - Engineering technician
0808 - Architecture
0810 - Civil engineering
0819 - Environmental engineering
0830 - Mechanical engineering
0850 - Electrical engineering
0896 - Industrial engineering
1152 - Production control
1170 - Realty
1173 - Housing management
0560 - Budget administration
0501 - Financial administration and program
0505 - Financial management
9999 - Dummy code

41. **Academic Education Level (AEL)** – indicates a required advanced degree on officer requirements. P = Masters degree and R = Ph.D.
42. **Rated Position Identifier (RPI)** – identifies the type of aeronautical rating required on all officer requirements. Codes include:
- 0 - Not applicable (none required)
 - 1 - Aircrew (pilot)
 - 3 - Aircrew supervisory (pilot or nav/obs)
 - 4 - Operations control (pilot or nav/obs)
 - 5 - Aerospace crew effectiveness (flight surgeons)
 - 6 - Aircrew supervisory (pilot or nav/obs)
 - 8 - Operations control (pilot or nav/obs)
- E No satisfactory private commercial source available
- G Function now in in-house, but scheduled for conversion to contract
- N Function in-house or contract method of performance has never been reviewed or approved
- X In-house solely at the discretion of commander
45. **Year of Last Review (YLR)** – indicates the year the position was last reviewed for commercial/industrial purposes
46. **Year of Next Review (YNR)** – indicates the year the position is scheduled for commercial/industrial review
47. **Authorized Duty Title (DTY)** – a three-digit code indicating a specific duty title. The associated title will print instead of the AFS Title in position 27 if a code appears. Codes include:
- 063 - Chief
 - 071 - Chief
 - 074 - Chief of staff
 - 082 - Commandant
 - 083 - Commander
 - 107 - Dean
 - 116 - Deputy commander
 - 123 - Director
 - 125 - Dormitory manager
 - 164 - Executive officer
 - 330 - Judge advocate
 - 333 - Flight commander
 - 339 - Foreman
 - 368 - Laborer

373 - Librarian
410 - Mess attendant
430 - Leader
558 - Quality assurance evaluator
560 - QAE-Trans A/C maintenance
629 - Supervisor
710 - Vice commandant
711 - Vice commander

48. **Military Essentiality (MES)** – identifies the reason military personnel are required to be military. Codes include:

- A Combat or direct combat support
- B Requires previous training that is military in nature
- C By tradition and custom (honor guard)
- D Military required in agencies outside the Air Force (Defense Supply Agency)
- E Current military experience is required
- F Should be or is usually filled by civilians
- H Incumbent required to exercise direct military authority over military subordinates (commanders and 1st Sergeants)
- I Military required by law (Judge advocate, Chaplain)
- J Civilian position where incumbent is Air Reserve Technician or Air National Guard Technician (ART/ANGT)
- M Indirect combat support, civilian volunteers may be unavailable or prohibited by policy
- R Undergoing in-house vs. contract cost study
- S Remained in-house after contract cost study
- T Not military essential, except for critical military skills (CMS), awaiting wartime tasking
- Z Indirect combat support, not military essential

49. **Functional Category (FCT)** – shows the relationship of a position to the mission of a unit. Codes include:

- A Permanent party, military and civilian positions that directly supporting the mission
- D Terminal assignees, colonels assigned as overages on terminal assignments
- E Enroute students
- L Pipeline (students and patients), positions administered by unit but not directly supporting mission
- N Airman OTS and AECP trainees

50. RLA - Authorized Language Required - identifies a specific language requirement. Codes include:

CQ Chinese
 DG Arabic
 GT German
 JM Italian
 PG Pidgin English
 RU Russian
 SR Spanish

51. **Personnel Reliability Program/Sensitive Compartmented Information Status (HPS)** – identifies positions in the personnel reliability program (PRP) and those having access to sensitive compartmented information. Codes include:

A Critical position for nuclear weapons duty
 D Controlled position for nuclear weapons duty
 S Authorized SCI access
 1 Codes A and S apply
 2 Codes D and S apply

52. **Security Access Requirement (SAR)** – indicates level of access to classified information required on a normal, day-to-day basis. Codes include 1 - Secret, 2 - Top Secret, 3 - Top Secret/SIOP/ESI, and 5 - Top Secret/SCI.

53. **Civil Air Reserve Forces Identity (ART)** – code used to identify types of reserve forces

54. **Manpower Standard Implementation (MSI)** – the type or class of manpower standard used in establishing the requirement. Codes are given below:

C-Air Force Study	Applies to all positions in the core portion of approved Air Force manpower standards. Code approved variances with the applicable MSI code. Logistics Composite Model (LCOM) developed aircraft maintenance studies will continue to use the appropriate LCOM MSI code.
F-Crew Ratio	Positions determined by Air Force approved crew ratios; to include aircraft, missiles, and space systems. MSI code "C" has precedence over this code.
I-Indeterminate	Applies to all manpower positions not defined by an approved manpower standard, LCOM, or crew ratio.
J-Joint Healthcare Study	Applies to all positions covered by approved medical studies developed by the Joint Healthcare Management Engineering

	Team (MQ) and the associated Air Force variances quantified by the Air Force Medical MQ.
L-LCOM	Applies to all maintenance requirements derived by LCOM techniques.
M-Maintenance Study	Applies to all maintenance requirements derived by MEP techniques. For Maintenance functions, "M" is used instead of "C."
N	Use this code for a position added to the UMD but not covered by the existing AFMS for the work center. This code used only until a variance is approved.
P-Pending Variance	Variances pending approval by the Air Staff. This code used to identify positions not currently included in the AFMS which the OPR or MAJCOM want to include as part of the approved standard. This code used for no more than one year.
R-Reimbursable	Applies to all positions developed through a Depot Maintenance Business Area Fund (DMBA) competitive study, positions managed for outside agencies (such as the National Security Agency or Defense Intelligence Agency), foreign military sales, or positions where funding is reimbursed by outside agencies. This code not used for positions covered as part of the Defense Business Operating Fund (DBOF).
V-Variance	HQ USAF/PE approved variance to an Air Force manpower study.

55. **Manpower Remarks (RMK)** – provides additional information not found elsewhere

56. **Air Reserve Forces Identity (ARR)**

57. **Command Manpower Remarks (CRK)** – provides a place for the MAJCOM to include additional remarks and information on civilian conversions and cuts.

A new UMD is issued each quarter. To see how the manpower set is changing over time, keeping a few years of UMDs is useful.

7.3 Unit Military Personnel Roster (UMPR)

The UMD deals with only the places; the Military Personnel Roster deals with faces. This is the first document so far discussed that contains names. The link between the UMD and the UMPR is the position number.

The UMPR detail line contains at least two lines. The first line of each record contains information on the position. The second, third, fourth, etc. line(s) contain the information on the person(s) who fills the position. (see Figure 4, Example of a UMPR).

7.4 Unit Civilian Personnel Roster (UCPR)

Most of the information on the UMPR is similar to the information on the UMD or other personnel documents. Some key points follow.

The first line of each record is similar to UMD information. DAFSC in the second line indicates Duty AFSC. A-CAFSC indicates an individual's control AFSC and O-PAFSC indicates an individual's Primary AFSC. The OBAN indicates the base's operating budget account number. The RC/CC indicates the responsibility center/cost center (a funding code). AR indicates the aeronautical rating: A = pilot, Y = none.

If a position has someone more than two ranks off the authorized grade, a mismatch will occur.

In addition to the standard, personnel-type information; the UCPR contains some other information.

The Civilian Personnel Control Number (CPCN) is a set of position numbers, different than those found on the UMD, used by the Civilian Personnel offices. AUTH-STAT is the UMD position number. PP-SERS-GR is the pay plan, series, and grade. TGT is a target grade if the individual is in a developmental position and FAS is, simply, the office symbol where the individual works.

A current UCPR should be maintained and as much history as feasible; at least, two years. [see Figure 5, Example of a Civilian Personnel Roster (UCPR.)].

DRAFT - NOT FOR IMPLEMENTATION OR COMPLIANCE

Working in the Resources Flight

Figure 4. Example of a UMPR

AFSC/ DAFSC	GR/GR	953/NAME	954	961	962	963/SSAN	964	POS-NR/DS	SAR FAC/ A-CAFSC	PEC/O- PAFSC	RRP	RPI	SEI/AR	MP-RMKS/ OBAN	RC/CC
ORG-ST- ID/MEOE	Maintenance Engineer														
32E3C/ 32E3C	CPT/CPT	1/Sanders	1	1	1	1/987-64-3214	1	253691/ 32E3G	1 44EO	72878A/ 32E3G		0	Y	20	234436
32E3F/ 32E3F	CPT/ILT	1/KRIEG	1	1	1	1/123-45-6789	1	253688/ 32E3F	1 44EO	72878A/ 32E3F		0	Y	20	234436
32E3E	CPT	1	1	1	1	1	1	253691	1 44EO	72878A		0			
3E571/ 3E571/ 3E551	TSG/MSG/T SG	1/BLADES/T HOMAS	1	1	1	1/256-85-7852/1 42-85-9513	1	253687/ 3E571/3E571	1 44EO	72878A/ 3E571/ 3E371				20/20	234436/ 234436
3E551/ *3E531\ >>>3E531	SSG/A1C/ AMN	1/ MATTHEWS /SPINDLER	1	1	1	1/412-68-8159/1 25-85-7401	1	253687/ 3E531/3E531	1 44EO	72878A/ 3E531/3 E531				20/20	234436/ 234436

* If a position has someone in it that is more than two ranks off the authorized grade, a mismatch will occur.

>>> Individuals not yet assigned to a position.

Figure 5. Example of a Civilian Personnel Roster (UCPR)

OSC	AUTH-STAT	AFSC	PV	PP-SERS-GR	TGT	NAME	SSAN	FAS	FAC	PEC	AF- RMKS	CCPO	REMARKS
MEOE	3 0256741	5525G		GS-801-12		HANSON JASON/ CHIEF, MAINTENANCE ENGINEERING	345-98-2541	CEOE	44EO6 O	72478A		MAINTENANCE ENGR	
MEOE	3 0254878	5525C		GS-810-11		HOLMAN ROD/CIVIL ENGINEER	149-65-7852	CEOE	44E060	72478A		MAINTENANCE ENGR	

**7.5 Authorization
Change Notices
(ACN)**

The ACN provides notification of any recent changes to the UMD, since the last quarterly printing, providing a means to keep current with changes between quarterly runs of the UMD.

Manpower changes result from one of the following actions:

1. authorization change request;
2. manpower standard application and re-application;
3. career progression group adjustments done by the AF to ensure career progression in positions;
4. congressional-directed adjustment, due to exceeding grade ceilings, etc.; and
5. MAJCOM functional manager directed adjustment made by MAJCOM to meet command priorities.

At the top left of the document, under the prepared date, is the RSN number. This is used when updating the UMD.

The top of the document also contains some base data along with a rationale as to why the UMD was changed.

Figure 6, Example of an ACN, shows the data fields contained on the ACN. They are identical to the UMD, except the fiscal quarters are also shown on each line

Changes or deletions contain two lines. The first repeats the current UMD information. The second line indicates the changes. If a position is being deleted, the fiscal quarter numbers will show zeroes.

Additions contain one line showing the new manpower requirements. If there are no new position numbers, there will be no additions.

The only new terms on the ACN, different from the UMD, are in the section in the middle with a fiscal quarter break-out of authorized amounts. Otherwise, the ACN reads like the UMD. Sometimes, changes are just included at the end, like the change in the YLR in Figure 6.

The example in Figure 6 shows the loss of a SSG position and the gain of an SRA position. One position has gone through a commercial review and the YLR and YNR are being updated.

The ACN bridges the gap between quarterly printings of the UMD. To keep a UMD current, the ACNs are used to make pen-and-ink changes to the UMD.

Upon receipt of an ACN, the RSN number at the top of the document, should be noted.

Changes found on the ACN should be written directly on to the UMD, using red ink. Each change in the UMD, should be annotated by writing “RSN XX” next to the change; to help identify the source document. Finally, the ACN should be filed.

The UMD must be kept current in order to meet the frequent requests by BCE and other flight managers for current manpower information.

Chapter 8 Managing Automated Manpower Data

As discussed in Chapter 7, most of the manpower is data in paper format. Retrieval of any personnel or manpower information becomes a long and cumbersome task. WIMS has automated some of this information to allow efficient retrieval and analysis of manpower and personnel information.

8.1 Automated UMD - AUMD

The WIMS AUMD file provides UMD information on each manpower position. Figure 7, WIMS AUMD Data Entry Screen, shows the AUMD data entry screen in WIMS.

Figure 7. WIMS AUMD Data Entry Screen

Unit Manning Document			
Position Number: 0761030	Type: CIU	Number Req/Auth: 1	Funded
Position Title: APR CONST EQP OPR		Number Assigned: 1	
Code:		Installation Code: FNMZ A	
Required Grade: CIU	AFSC: 3E251	Mission Essential: N	
Effective Grade: CIU	AFSC: 3E251	Security Access:	
		Academic Level:	
Program Element: 11878A		Academic Specialty:	
CEC: 20		Flying Position Code:	
SEI:		Functional Category:	
FAC: 44E000		Standard Implement:	
OSC: CE0HH		HPS (PRP/SCI Status):	
Manpower Type: XXXXX		Manpower Remarks:	
Effective Date: 932		Command Remarks:	
Expiration Date: 999		Last Modification: UPL 930507	
Local Remarks:			
(1)Keys	(2)First	(3)Desc	(4)Prev
	(10)Query		(5)Next
(17)Person		(13)Help	(8)Find
		(29)Info	(15)Print
			(16)Retrn
			(32)Exit

All of the information contained in this record is identical to the information found in the UMD for a given position.

Data Management — All of the data in WIMS must be manually entered using the UMD as the source document. Once it is entered, the database is kept current by updating the database with information received in ACNs or new UMDs. The Resources Flight is responsible for the maintenance of the AUMD file.

Data Retrieval — With the UMD information loaded in a WIMS data file, WIMS reports or inquiries can be written to pull the necessary information to answer questions. WIMS report will provide all the funded, civilian positions in CEO.

8.2 Automated Personnel File

Just like the UMD, personnel information (both military and civilian) are contained in the APER WIMS data file. The file contains personal information (see Figure 8), military and civilian information (see Figures 9 and 10), and readiness position information (see Figure 11).

Figure 8. WIMS APER Data File - Personal Information

Personnel Information			
Full Name:	ADAMS		B
SSAN:			
Grade:	MSGT	E 7	
Cost Center:	442 - 0 PX	FNWZ A	
Office Sym:	CEOH		
Duty Phone:	65152		
Supervisor:		JR	A
Duty Title:	MCOIC, HORIZONTAL		
UMD Position	0765395	Type: ENL	Title: PAVE/CONS EQP SHPT
Home Phone:			
Address:			
		Release Info: N (Y/N)	
Spouse:			Mod By: Z02 on 940616
This information is covered by the Privacy Act of 1974			
Press Enter to view next screen			
(1)Keys	(3)Desc	(5)Next	(8)Find
(17)Trng	(18)Appt	(13)Help	(15)Print
(19)Grade	(20)UMD	(29)Info	(16)Retrn
			(32)Exit

Figure 9. WIMS APER Data File - Military Information

Personnel Information - Military			
Name:	MSGT ADAMS		B
AFSC's Duty:	3E271		
Primary:	3E271		
Second:			
Control:	3E271		
Dep. Care:	N		
State Res:	TX		
Birthdate:			
Service:			
Date of Rank:			
Separation:			
Report NLT:			
Est Arrive:			
Act Arrive:			
Departure:			
Remarks:			
This information is covered by the Privacy Act of 1974			
Press Enter to view next screen			
(1)Keys	(3)Desc	(5)Next	(8)Find
		(13)Help	(15)Print
			(16)Retrn
			(32)Exit

Figure 10. WIMS APER Data File - Civilian Information

Personnel Information			
Full Name:	ANDERSON		H
SSAN:			
Grade:	GS-11	GS 11	
Cost Center:	416 - 0 EG	FMWZ A	
Office Sym:	CEU		
Duty Phone:	65619		
Supervisor:			A
Duty Title:	ENVIRONMENTAL ENGINEER		
UMD Position	0784012	Type: CIV	Title: CIV ENGR GENERAL ENGINEER
Home Phone:			
Address:			
			Release Info: N (Y/N)
Spouse:			Mod By: MIR on 940613
	This information is covered by the Privacy Act of 1974		
Press Enter to view next screen			
(1)Keys	(2)First	(3)Desc	(4)Prev
			(5)Next
			(13)Help
(17)Trng	(18)Appt	(19)Grade	(20)UMD
			(29)Info
			(8)Find
			(15)Print
			(16)Retrn
			(32)Exit

Figure 11. WIMS APER Data File - Readiness Information

Readiness Information			
Name:	MSGT ADAMS		B
Readiness Position:	ES01	33	
Control AFSC:	3E271		
		Equipment % Compl	
		542X0	0
Mobility Position Number:		Require Training:	Y
Deployed Manning Document:		Release To Admin:	N
Remarks:			
Press Enter to view next screen			
(1)Keys	(3)Desc	(5)Next	(8)Find
		(13)Help	(15)Print
(25)Trng	(26)Spclen		(16)Retrn
			(32)Exit

Data Management — The administration section and the rest of the squadron depend on current personnel information. The WIMS modules, labor accounting, shop rates, and readiness management, must have a current APER.

The administration section (orderly room) is responsible for maintaining the APER file. As personnel arrive and depart, the APER records must be updated. If the orderly room does not maintain the APER, Resources should.

Data Retrieval — Just like any other WIMS data file, the APER is available for use with the Report Utility. The

APER is linked to the AUMD file (through the position number), so reports can be run to see who is occupying which positions. This is the kind of information in which the BCE and flight managers will be most interested; not only what the position is, but who is in those positions.

8.3 Commercially Available Applications

Any commercially-available software applications can be used to track manpower requirements. Many managers prefer these applications because they provide more flexibility. Spreadsheets such as Excel, Lotus 1 2 3, and Quattro® Pro or databases such as dBase IV, FoxPro, Access, and Paradox can be used. Even though manpower and personnel may be tracked in a PC-based application; the APER file must still be maintained in WIMS to provide those other WIMS programs with essential data.

Chapter 9 Manpower Analysis

Once it is known from whence manpower cometh and the management of personnel and manpower data has been mastered; that data can help the BCE accomplish the mission by doing manpower analysis. In most cases, the manpower analysis seeks to determine capability, what the manpower standards say should be done, and what, actually, can be done. This is accomplished by developing measures (metrics) on what percentage of the work should be accomplished.

9.1 Strength

The most common measure used is the simple strength metrics; that is, how many people there are compared to how many there should be. Capability measures deal with how many people there are. In answering the question, how many authorized and required there should be, both should always be considered.

9.1.1 *Authorized Strength Capability*

Percent manning is the most commonly-used manpower capability measure. The measure determines what percentage of authorized positions are filled. Expressed simply:

$$\%M = \frac{\text{People_Assigned}}{\text{Positions_Authorized}} \times 100\%$$

The measure shows what percentage of authorized strength is manned. However, if a flight's %M is 80 percent, that does not necessarily mean that 80 percent of the work in the manpower standard is being completed.

9.1.2 *Required Strength Capability*

Required strength capability measures capability against the manpower standard. The required strength measure considers an unfunded manpower position as a vacant position; i.e., work not being accomplished. Expressed simply:

$$\%R = \frac{\text{People_Assigned}}{\text{Positions_Required}} \times 100\%$$

If a flight's %R is 80 percent, they only have 80 percent of the people the manpower standard requires. It may not necessarily mean that only 20 percent of the work is not being completed.

9.1.3 *Funding Authorization Capability*

Another useful measure is the percentage of manpower requirements that are actually authorized (funded). In theory, the Air Force wants this number to be 100 percent for all

units; that is, 100 percent funded manpower. Expressed simply:

$$\% A = \frac{\text{Positions_Authorized}}{\text{Positions_Required}} \times 100\%$$

if:

$$\% A = 100\%,$$

then,

$$\% M = \% R$$

9.1.4 *Who to Measure*

Each of these measures can be made for the squadron as a whole, by flight, element, or workcenter.

If it appears to be a manpower problem, the squadron's capability should be measured first. If that seems low, then each flight is measured and, finally, each workcenter. Even though a squadron's number may be satisfactory, some workcenters may be over-manned and others may be under-manned.

A spreadsheet or WIMS report will automatically perform these calculations. The measures should be reviewed periodically or as required.

9.2 Skills

Although capability measures are useful, they show only the right number of people, not the right kinds of people. Skill capability measures help determine if there are the right types of people. To determine skills capability, the strength capability measures are used, by skills, instead of organization levels.

9.2.1 *Skills Mix*

To determine skill mix capability, %M, %R, and %A are used for each assigned AFSC. An example of a partial analysis is provided in Table 13, An Example of a Partial Analysis of Skill Mix.

Table 13. An Example of a Partial Analysis of Skill Mix

AFSC	Skill	People Assigned	Positions Authorized	Positions Required	%M	%R	%A
3E1X1	Heating, air conditioning and refrigeration	9	10	10	90%	90%	100%
3E2X1	Pavements and construction equipment	14	19	20	74%	70%	95%
3E3X1	Structural						

Using this information, it can be determined which of the skills are truly constraining the completion of work, so that flight chiefs and foreman can manage those skill's work hours very carefully.

9.2.2 Skill Levels

A similar analysis can be done by skill level. There may be the correct number of structural people, but they may all be 3 levels. This means all the work required by the manpower standard won't be accomplished. An example is given in Table 14, Determining Skill Levels.

Table 14. Determining Skill Levels

Skill Level	People Assigned	Positions Authorized	Positions Required	%M	%R	%A
3	9	10	10	90%	90%	100%
5	24	29	30	83%	80%	97%
7	18	22	22	82%	82%	100%
9	5	4	3	125%	167%	133%
0	1	1	1	100%	100%	100%

9.2.3 Combining the Skill and Skill Levels

Looking at the capability of the skill levels within each skill provides even more detailed information. This information can help determine exactly where problem areas lie.

9.3 Experience

Determining the overall experience of an organization is similar to analyzing skill levels. Instead of looking at the number of people assigned versus authorized or required, the total years of experience of assigned personnel versus the total years of what the average authorized manpower set would have is calculated. First, an individual's grade is determined, then the average years of service for that grade. The same is done for the positions. (see Table 15 , Years of Service by Grade.)

Table 15. Years of Service by Grade

Grade	Avg Yrs Service	Grade	Avg Yrs Service
AB	0.5	CMS	25.0
AMN	1.0	2LT	1.8
A1C	2.0	1LT	4.0
SRA	3.0	CPT	9.0
SGT	5.0	MAJ	14.4
SSG	10.0	LTC	19.2
TSG	15.0	COL	23.4
MSG	18.0	BGEN	26.8
SMS	21.0		

The experience for the assigned positions is added and, then, divided by the authorized positions. This yields a percentage experience measure. (see Table 16, Sample Equation Calculating Experience.)

Civilian positions have no calculations associated with them. Only civilians who are qualified for their jobs are hired, so it is assumed the civilian experience percentage is always 100 percent.

This analysis can be done by organization, skill, skill level, or a combination of all. The measure that is best at determining manpower requirements should be used.

Table 16. Sample Equation Calculating Experience

Position	Auth Grd	Years of Service	Assgn Grd	Years of Service	Experience Percentage
1	A1C	2	AMN	1	
2	SSG	5	SSG	5	
3	SMS	21	MSG	18	
4	CIV		CIV		
5	CPT	9	CPT	9	
SUM		37		33	33/37*100= 89%

9.4 Cut Drills

When a unit faces a cut drill, these manpower capability measures should be used to determine what positions should be eliminated. The easy way to approach a cut drill (especially, a civilian cut drill) is to eliminate vacant positions. This minimizes personnel impact, but it could hurt the or-

ganization in the long-run The steps to follow in analyzing positions for a cutback are:

Step 1: Calculate several capability measures.

Step 2: Play “what if” and see what happens to capability measures based on a variety of decisions.

Step 3: Determine impacts of lost positions in terms of work not being accomplished.

The following are some items to consider before making cuts.

Don’t cut high-level or civilian positions in a skill that is currently experiencing problems. To cut in problem areas could result in making experience problems permanent.

While the approach should be long-range, short range requirements cannot be ignored.

Backlogs should be examined. Consider consolidations of functions or reorganization to bring measures (and impacts) back to a more comfortable level

Reduction in force (RIF) rules must be followed. Just because a position is kept doesn’t mean the person in it stays. He/she may get bumped from another organization.

Many civil engineers have developed a prioritized list of all squadron civilian positions. The list is periodically reviewed and updated as necessary. This prevents a rushed decision process when a short-notice RIF is announced. Making carefully-considered, fully-analyzed decisions is fair to the government and to employees.

9.5 Impact Analysis

Being 50-percent manned or having 68 percent of the required seven-level structural workers does not mean anything unless these percentages are related to work.

There are no exact ways or right answers to look at what work isn’t getting done.

The Process Analysis Summary from the AFMS is used to determine the percentage of time each of the major categories of workload takes if the flight is undermanned. If the flight is rated at 50 percent capability, the bottom 50 percent of the workload should be eliminated.

Although not easy, if the output of a particular function or group of functions can be identified, a manpower percentage can be used to determine the reduction in that level of output. As an example, if the Fire Protection Flight technical services shop is 50-percent manned and they usually do 300 building inspections a year, they may now only be able to do 150.

The experience factor should also be considered. If the personnel are inexperienced or underskilled, they are not capable of completing even 150.

9.5.1 *Using Man-hours in Determining Impacts*

Especially in the Operations Flight, work hours tend to be a carefully-managed resource. Manpower represents that resource capacity. The following steps can be used to determine work output impact in a cut drill.

- Step 1: Multiply the number of positions being cut in a given area by 2087 man-hours/year.
- Step 2: The CE Financial Management can provide the availability rate for an area or workcenter. The availability rate is defined as the productive hours divided by the total hours.
- Step 3: The number from Step 1 is multiplied by the availability rate determined in Step 2.
- Step 4: What a workcenter or area produces (their output; i.e., direct scheduled work orders, programmed work orders, designs) must be determined.
- Step 5: The average hours per unit of output (hours per DSWO) is calculated.
- Step 6: The workhour number (Step 3) is divided by the number calculated in Step 5. This determines how many of the units of output won't be produced.
- Step 7: The customers affected should be identified.
- Step 8: Determine how those customers will be affected.

9.5.2 *Backlogs*

To easily calculate the expected backlog, the rate at which requirements come in to a function should be determined. This will show how many requirements the workcenter will be able to fulfill after the cuts.

A simplified example would be Routine Direct Scheduled Work Orders: If:

X_{in} = DSWOs received per month and

X_{out} = the number of DSWOs completed in a month, then,

$X_{in} - X_{out}$ = the expected monthly backlog increase.

9.5.3 *Levels of Service*

Backlogs are interesting to analyze, but determining the impact on the level of service to the customer is probably more important. The following formula can be used as a guide:

$$W_L = \frac{B_L}{X_L} \text{ (in months)}$$

where:

X_L = average monthly DSWOs received,

B_L = backlog for month L, and

W_L = work order wait time (turnaround).

9.5.4 *Hidden Costs*

There are hidden costs to cut drills. If recurring maintenance is stopped (a poor management decision), things may start to break three months later. Both direct and indirect impacts of manpower cuts should be fully evaluated.

9.5.5 *Alternatives when Work Isn't Getting Done*

Work not getting done is not always the result of a manpower cut or a manpower shortage. Management has many alternatives in dealing with work that isn't being accomplished.

The AFMS should be current and qualified variances received. This option tends to be frustrating. Unless there has been an error in the application of the standard, getting more people on a "say so" is unlikely.

CE organizations and their processes should be checked using productivity analysis to ensure they are as efficient as possible. TQ techniques are used to trim the processes.

If a base claims the work in the standard can't be accomplished with the people the standard gives them, then they are not organized in the way the standard defines. Some bases still don't operate under zonal maintenance or cradle-to-grave project management.

Many functions can't get the work in the standard accomplished because they're doing so much work that isn't cov-

ered in the standard. Pet projects or sacred cows must be minimized so that functions can perform the tasks required in the Process Analysis section of the AFMS.

Overtime should be reserved for those peaks in the workload or short periods of time while a position is temporarily vacant. Overtime should not be used routinely. Overtime, if used in excess, can have a negative impact on the work force morale and hurt productivity; and, civilian overtime costs money.

Overhires should be used for seasonal requirements such as snow removal or other short-term workloads. Overhires, civilian employees who work but have no position number on the UMD, are not a permanent fix. The cost and work-years of overhires must be absorbed by the base. The funds and the available work-years must be available.

Many workloads or backlogs can be outsourced (contracted out). The use of the requirements of contracts and SABER can be examined to deal with peaks and backlogs. A reminder: contracts cost money.

A squadron commander has a tremendous amount of flexibility in assigning military resources internally. Although a military member may hold a position in one area, the BCE can tell that individual to work in a different area. A position in the area is not needed to make this type of move. Commanders use this option to fill critical civilian vacancies during hiring freezes or during the hiring process. As an example, the housing manager retired and a civilian personnel has frozen personnel actions because of an impending RIF. A BCE may re-assign a Captain who is a design engineer from CEC to be the housing manager in CEH. The career progression of a military member must not be hurt. Also, the person chosen may not be current in skills. A structural craftsman, working in Environmental for two years, will still take the same promotion test with other structural craftsman and compete for the same promotions. Is the craftsman current in his skill?

There are organizational dynamics in moving military around; especially to, historically, civilian duties. In the example of moving the Captain to housing, will the people in

the Housing Flight believe none of them were considered for the job?

Civilians can also be re-assigned, but must be formally detailed through the civilian personnel process. There are some specific rules that must be followed in detailing civilians. The Civilian Personnel Flight can supply details.

9.5.6 *Manning
Assistance*

When the six-month projected assigned manning drops below acceptable levels, the personnel route can be used to get military positions filled. Considerable lead time is required in the assignment process so the request must not wait until the position is vacant. A formal, manning assistance letter can be sent to personnel but the more informal processes seem to work more efficiently. Most organizations believe they're undermanned.

Work should not be done if it's not required. Before any workload is ignored, it must be fully understood.

Chapter 10 Changing the Manpower Set

The BCE has some flexibility in changing the CE manpower set (changing or realigning the UMD). Skills on positions can be changed and positions moved from one workcenter to another. Even grades can be changed. The key to success is the undertaking must, usually, be played by a zero-sum game. Creating manpower positions or increasing grades on positions can't just be done; an offset to the action taken must be provided. Most other attributes on positions mentioned earlier can be traded within the organization.

10.1 When to Change the UMD

Some people make the mistake of changing the UMD too often or for the wrong reasons. Sometimes they believe they can't change the UMD, when they actually can.

A change to a UMD should be submitted when:

- there are increases or decreases to manpower authorizations (zero sum);
- realignments (changing OSCs; when, usually, manpower can't be moved between FACs);
- the changes are authorized in AFSCs;
- there are adjustments to grades (zero sum);
- corrections to errors are made;
- changes to academic degree requirements (level and specialty) are authorized;
- mandated changes are received; and
- adjustments to military/civilian mix (although very difficult to achieve) were received.

Changes to the UMD should not be submitted when:

- there is shortage of assigned personnel,
- there is improper organizational structure,
- there is poor or inadequate supervision,
- personality conflicts arise,
- military - civilian personnel have difficulties in personal relations,
- inadequate tools or equipment are used,
- poor performance is recorded, and
- changes in mission are based only on assumption (mission changes should be mandated).

The commander has very little organizational flexibility down to the flight level. The commander has a tremendous

amount of flexibility below the flight level. The following actions can be taken by the commander:

- creation of organizational elements below the flight level,
- deletion of organizational elements below the flight level, and
- movement of requirements (positions) between organizational elements below the flight level but within the same PEC.

The key to this whole process is that the UMD must not be based on faces, only spaces. A BCE can make a number of personnel moves to deal with short-term problems, but if the UMD is changed, the effect of those changes are felt for many years to come; even after the problem people have left.

10.2 How to Change the UMD (Authorized Change Request)

The ACR is a document, generated by CE, containing a proposed change or set of changes to the UMD.

The ACR is produced by the Resources Flight and signed by the base Civil Engineer. The flight(s) requesting the actions or who have the functional expertise to help justify the change should be very involved in the writing of the justification.

The ACR is submitted to the MQ , who either does or does not concur with the action and, then, it is sent forward to the MAJCOM manpower office. There, the ACR is sent to the functional experts (MAJCOM/CE) for a recommendation. Then the action is approved or disapproved.

The justification should be a short, clear, and concise statement of why these actions are requested. This will be exactly what the MAJCOM is going to see in making a decision to approve or disapprove the request. The flight managers should provide help on technical issues or issues specific to the flight process.

Workload, backlog, overtime, borrowed labor hours, grade requirements, directives and regulations, and impacts should be included.

An example ACR is shown in Figure 13.

An ACR results in the authorization change notice (ACN). The change becomes official upon receipt of the ACN. An ACN is mailed to the person in the flight who initiated an ACR. Follow-up is required if it doesn't appear in a few months.

Figure 12. Example of an ACR

11 October 1994

MEMORANDUM FOR AFIT/MQ
ATTENTION: ED WATNEY

FROM: AFIT/CE, Bldg 643
Wright-Patterson AFB OH 45433-7765

SUBJECT: Manpower Authorization Change Request (ACR)

1. Request the following manpower actions be taken:

UNIT	PA	OSC	FAC	MPCN	AFSC	GR	EFF PEC	MNT	DT	ASI	QT	AMT	ACTION REQ
AFIT	F6C	EYC EYH	36146	025683	T034M2 T032E3C	MA	84731I 84752I	XXXXX		1AI 4YY	94/	1 OF	CHG MULT
AFIT	F6C	EYE EYC	36146	025475	3A051	SSC	84752I	XXXXX			95/	1 OF	CHG OSC

2. The first action realigns a faculty position within The Civil Engineer and Services School. The military faculty position is being moved to the Environmental Management Department to help meet the demands of our expanding environmental education program. The position is being converted to a civil engineer AFSC. The position is excess in EYG as a result of the ACN posted 16 June 1994 (RSN 57), which involved converting a military faculty position to a civilian faculty position and a civilian staff position to a military staff position.

3. The second action realigns a military staff position within The Civil Engineer and Services School. This action completes the conversion as described in the paragraph above.

4. Unit Manning Document information has been verified. This following coordination supports this action:

AFIT/MSD	_____	AFIT/MSP	_____
AFIT/CEM	_____	AFIT/CEV	_____

5. If you have questions, please contact Capt Norm Peterson at 58386.

SAM M. MALONE, Colonel, USAF
Commander

Chapter 11 Civilian Personnel Management

The area of civilian personnel management is very complex and dynamic. The civilian personnel office is the best source of the most current information. The 36-series of AFIs is also helpful. This chapter covers the basics of the civilian personnel process.

The importance of the civilian employee to the Civil Engineer's mission should be stressed to all managers. Even military managers must understand how both the civilian system and the military personnel system operates.

11.1 Pay Plans, Grades, and Series

There are, in general, two types or categories of civilian positions: competitive service and excepted service.

The filling of competitive service positions are subject to open competition among the public. The filling of expected service jobs do not require open competition. Almost all CE positions are part of the competitive service.

Just like military, civilians in federal service have ranks. Their ranks determine how much they get paid. Pay plans and grades are determined by the tasks and responsibilities required by the job as outlined in the position description (often called a PD).

Several pay plans exist, distinguishing different types of civilian employees. These plans are given in Table 17, Civilian Employee Pay Plans.

Table 17. Civilian Employee Pay Plans

Pay Plan	Description	Remarks
WG	Wage Grade	Laborers and craftsman
WL	Wage Leader	Middle level craftsman supervisors
WS	Wage Supervisor	High level craftsman supervisors
GS	General Schedule	Office personnel, engineers, managers, etc
SES	Senior Executive	General equivalents
AD	As Determined	Miscellaneous

The Operations Flight has the majority of the WG/WL/WS employees. These are the craftsman. Their pay plan is based on the prevailing wage in the local area as defined in the Davis-Bacon Act.

Almost all other employees in the CE squadron are GS employees. Their wages are based on the Federal General Schedule. Locality pay, expressed in terms of a percentage, is applied for all locations.

Senior executives are general officer equivalent civilians and are paid from the Senior Executive Schedule. AD employees have their own pay plans depending on the location.

Within each pay plan is a series of grades. Within each grade, there is sometimes a series of steps. The wage scale has both grades and steps within the grades.

In wage grade there are 15 grade levels, WG-1 to WG-15, and five steps within each grade. Steps are received based on tenure and can also be given for merit. A position description generates a required grade for a position. Steps are determined by the employee filling the position.

In wage leader there are 19 grade levels, WS-1 to WS-19, where 19 is the highest, and five steps within each grade. Steps and grades are determined exactly like the WG/WL positions.

In general schedule there are 15 grade levels, GS-1 to GS-15, where 15 is the highest, and ten steps within each grade. Steps are received based on tenure and can also be given for merit. A position description generates a required grade for a position. Steps are determined by the employee filling the position.

In senior executive there are six grade levels, ES-1 to ES-6, where 6 is the highest,) with no steps. The position determines the grade and senior civilians compete for those positions.

For assistance with any AD employee, the local civilian personnel office should be consulted.

The occupation series is often called the classification. To identify their skills, all civilians, regardless of pay plan, use a four-digit, occupational series code (see the OCC in the UMD section) similar to the military AFSC. A single, occupational series code identifies a class of positions requiring

similar qualifications and treated the same for most personnel processes.

11.2 Hiring

The civilian hiring process is complex. There are many rules and steps to the process. Those who learn the system can have great success in filling their manpower needs with qualified people.

There are two main sources of civilian manpower resources: outside hire and internal placement.

One of the sources for civilian employees is outside the federal government. In these times of down-sizing, this source is much less common; but, there are still many opportunities to hire new talent.

The central personnel agency of the federal government is the Office of Personnel Management (OPM). It implements law and makes policy on matters of civilian personnel administration. Individuals will have their knowledge, skills and abilities (KSAs) updated in the skills bank so their names will come up on the list of candidates for specific openings. Local civilian personnel offices have applications on file for people who have applied for jobs through their office. Their names will also come out on a candidate's list.

Former federal employees who have served as career employees (more than three years of continuous service) and have already competed through the OPM process, may have reinstatement rights and may have to be hired if they are qualified for a position.

The great majority of personnel moves are made internally. Many processes for getting current federal employees exist. These include promotion, re-assignment, demotion, and detail.

A promotion changes an employee to a higher grade. The employee must be qualified for the higher grade. This usually means serving at least one year in their current grade. GS employees can jump two grades, to the rank of GS-11 (e.g., promoted from GS-7 to GS-9). For promotion to GS-12, they must have served in a position of a GS-11 for one year. Civilians receive promotions based on the position they fill. The grade of a position is based on the PD.

Many managers write developmental positions for hard-to-fill vacancies. That means an employee enters the position at a certain grade and, after a predetermined training period, is promoted to the next grade, without changing positions (e.g. GS-11/12, called a GS-11, target 12 position).

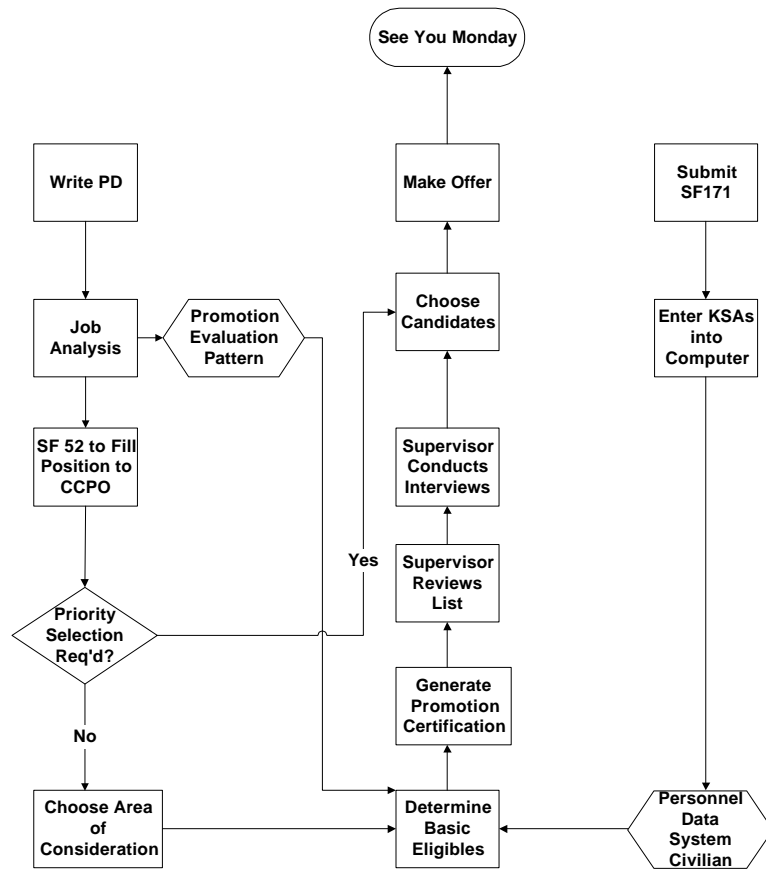
A re-assignment is a change of an employee to another position at the same grade. The employee must be qualified for the position, even if it is a different series. The re-assignment is often called a lateral.

A demotion is a change of an employee to a lower grade, usually due to poor performance or relocation at the employees request.

A detail is a temporary assignment of an employee to a different position for a specified period of time. Most detailed employees continue to be paid based on their official positions.

The steps, illustrated in Figure 14, Civilian Hiring Process, are as follows.

Figure 13. Civilian Hiring Process

**Step 1: Write a PD**

Writing the position description is the first step in hiring a civilian employee. Most often, a PD already exists; however, it should be reviewed by the supervisor.

Step 2: Job Analysis

The civilian personnel office determines the grade and series of the position based on duties, responsibilities, qualification requirements, and level of work. The result is the promotion evaluation pattern (PEP). This is an automated record of the job requirements that will be used later to generate a list of qualified applicants.

Step 3: SF 52 to CCPO

The supervisor must send an SF 52, Request for Personnel Action, requesting a fill on the position

Step 4: Determine if a Priority Selection is Required

The civilian personnel office decides if a priority selection is required. If a qualified candidate is a mandatory hire, an offer will be made and that employee will be hired. This often happens with the Priority Placement Program (PPP), called the stopper list. This is the list of employees whose jobs were eliminated and have not yet been placed.

Referral and selection priorities are:

Highest Priority - Enforceable Assignment Rights: return rights, military service, and mandatory Placement.***

Second Category - Discrimination: discriminated against for employment, discriminated against for promotion, and not required for mandatory placement.***

Third Category - RIF: downgraded due to RIF, separated due to RIF, and mandatory placement.***

Fourth - Twelfth Categories: compensable injury recoveries, movement of functions.

***placement requirements vary

Step 5: Choose Area of Consideration

The civilian personnel office will choose the organizational or geographical area in which employees will be considered.

Step 6: Determine Basic Eligibles

The civilian personnel computer uses the PEP to match it with the knowledge, skills, and abilities of the applicants/current employees on record in the

Personnel Data System - Civilian (PDSC) to generate a list of eligibles, called the promotion certificate.

Step 7: Supervisor Reviews Lists

The supervisor reviews the list of eligibles, and conducts interviews, if necessary, to help make an informed decisions. If a supervisor chooses to interview, all eligibles must be given the opportunity to interview.

Step 8: Choose Candidate

The hiring supervisor then chooses the best candidate and civilian personnel makes the offer.

Step 9: Submit SF 171

For applicants to get KSAs updated, or for new applicants to the federal government, the SF 171 is used as an application. It's more like a résumé on a form. The civilian personnel office then uses this information to determine KSAs and enter them into the PDSC.

Qualifications are those characteristics possessed by an individual which show whether the person can do the job. These include general or specialized experience, education, training, and physical ability. There are additional eligibility requirements such as citizenship, suitability, and age limits in certain fields. Other qualifications may be based on OPM issuing qualification standards, knowledge, skills and abilities, education that can be substituted for experience (vice versa), certification of qualifications and the local civilian personnel office also classifies jobs, (job analysis/classification).

11.3 Reduction in Force (RIF)

In the down-sizing environment, RIFs become a critical issue. The civilian personnel office should have more detail on how a RIF might run at a base.

The following terms are important in understanding the RIF process.

Competitive Area — the area of consideration is geographic in a RIF.

Competitive Level — all positions in the competitive area that are interchangeable; in terms of experience, training and education, physical requirements, etc.

Tenure — incorporates type of appointment, veterans preference, and length of service.

Tenure Groups — for RIF purposes, employees are placed into one of three categories:

- Group I - career employees (no probation, > three years continuous service);
- Group II - career-conditional, career probationary; and
- Group III - term, TAPER, indefinite, etc.

Tenure Subgroups — each tenure group has three subgroups: (1) AD - disabled veteran, (2) A - veteran, and (3) B - non-veteran.

Ranking of Employees — employees in each competitive level are ranked according to their tenure group by years of service (I, II, III). Within each category, employees are ranked based on their subgroup (AD, A, B). Lastly, employees are ranked by the number of years in service. Additional years are added based on the most recent performance appraisal and for veterans' military service.

RIF Process — the RIF process occurs as follows:

- position is eliminated;
- locate vacancy at same grade level, if NO;
- lower retention employee RIF'd;
- the RIF'd employee
 - ◆ can bump someone with a lower tenure subgroup (i.e. IA to IIB), if NO,
 - ◆ can fill vacancies at the next grade lower, if NO,
 - ◆ can retreat to occupied lower grade position; if NO;
- separation; and
- process continues until exhausted.

RIF is a very serious issue and is a very personal matter for all employees. The needs of the organization and its people must be taken into account in carrying out the process.

11.4 Performance Appraisals

Each March, the civilian workforce receives an appraisal on their work performance; similar to the OPR or EPR received by military personnel.

At the beginning of each rating period, the supervisor reviews with the employee expected performance standards. Each one of these standards, called performance elements, is determined by the supervisor to be critical or noncritical. These standards are documented on an AF Form 860, called the performance plan.

Supervisors should formally discuss the employee's progress towards meeting and exceeding the performance standards once each quarter. These meetings should be documented in the employee's personnel folder.

Each June, the supervisor documents the employee's performance on an AF Form 860A. On the front side of the 860A, the employee is rated on a scale of 1 to 9 in the areas of: work effort, adaptability to work, problem-solving, working relationships, communication, work productivity, self-sufficiency, skill in work, and work management.

The reverse side of the form contains narratives on the performance elements. If the supervisor believes the employee exceeded the standard, then he/she must write a narrative.

The front side of the form also contains the overall performance rating:

- superior - exceeds all elements of the performance plan;
- excellent - exceeded more than one-half of the critical elements of the performance plan;
- fully successful - met the requirements of all the elements of the performance plan;
- minimally acceptable - did not meet one or more of the non-critical elements of the performance plan, but meets the requirements for all critical elements of the performance plan; or
- unacceptable - did not meet the requirements for one or more critical elements of the performance plan.

The base Civil Engineer is given a yearly budget to provide monetary performance awards to outstanding civilian performers. The award is given as a percentage of the em-

ployee's annual salary; usually, between 0.5 percent-3 percent.

Instead of a cash award, a merit step increase can be awarded. This permanently moves the civilian to the next pay step.

The awards program must be carefully managed. It means a great deal to the dedicated civilian employees in CE.

11.5 Positions Descriptions

A position description is a statement of duties and responsibilities comprising the work assigned to a civilian position. The position description is sent to the civilian personnel office for classification.

The position description has the following major components, and should be organized using these components:

Major Duties (a description of the duties):

Factor 1 - Knowledge Required by Position identifies any specialty knowledge required.

Factor 2 - Supervisory Controls specifies how closely the individual will be supervised.

Factor 3 - Guidelines state how much guidance there will be and how much judgment must be used.

Factor 4 - Complexity is how much analysis and coordination is required.

Factor 5 - Scope and Effect explains how much of the organization this job affect.

Factor 6 - Personal Contacts details with whom the incumbent must deal and what levels these people are.

Factor 7 - Purpose of Contacts (Factor 6 and 7 sometimes combined) explain why the job requires the above contacts.

Factor 8 - Physical Demands describes how much exertion and how many pounds are required to be lifted.

Factor 9 - Work Environment is this an office, field, lab, or shop environment.

11.6 Civilian Personnel Actions

All actions by the civilian personnel office (classification, hiring, firing, step increase, etc) should be initiated using the SF 52, Request for Personnel Action. The Resources Flight is usually asked to produce these forms and track their status. A database to control the flow of civilian personnel actions from CE should be created.

11.7 Civil Engineer Career Program (CECP)

The CECP at Randolph AFB, TX centrally manages the filling of high-level civil engineer positions Air Force-wide. The goal of the program is to acquire, nurture, sustain, and provide to management officials, highly-qualified engineers and community planning, natural resource, physical science professionals, housing, realty and fire protection specialists. All of these higher-level positions must be filled through CECP.

The benefits to management of CECP include faster turn-around time for certificates, quality candidates, enhanced recruitment, and development of better employees. The benefits to employees are increased opportunities for training and education, a master development plan, and progression opportunities.

CECP is the clearinghouse for CE professionals. The significant staffing advantages they provide are the right person for the right job and a certificate (list of eligibles). CECP also ensures the development of future CE civilian managers through training and recruitment.

Engineers, GS-11 and above, and Realty, Fire Protection, and Housing, GS-7 and above are eligible for the career program.

Chapter 12 Miscellaneous Manpower Issues

The Air Force Productivity Improvement Programs and the A-76 Cost Study are two other issues that are often discussed along with manpower management.

12.1 Productivity Programs

To encourage Air Force units to engage in capital investment that, in the long run, saves funds, the Air Force has developed the Productivity Enhancing Capital Investment program (PECI). This program provides funds to Air Force units for capital investments with specified pay back periods. There are three programs within the PEGI. They are the Fast Pay-back Capital Investment Program (FASCAP), the Productivity Investment Fund Program (PIF), and the Component Sponsored Investment Program (CSIP).

Investments that can realize significant manpower savings usually have the best opportunity for meeting required pay-back periods. Many CE units have traded manpower positions for equipment. In the late 80's and early 90's, a large number of CE squadrons purchased CAD systems for their Engineering Flights; justifying the savings based on the elimination of engineer technician (drafting) manpower positions.

General information about the programs is provided in this chapter. Further details are available in AFI 38-301 and from the Manpower Office. The following information comes directly from AFI 38-301.

12.1.1 *Qualifying for Funds*

To qualify for funds, each project:

- Requires a capital investment that falls within the program dollar ranges:

FASCAP — up to \$150,000,
PIF — more than \$150,000, or
CSIP — any dollar amount.

- The unit receiving funds must pay its own recurring operations and support (O&S) costs for new equipment.
- Total investment cost includes PEGI funds for acquisition, transportation, installation, one-time incidental costs, and command funds used.

- The investment ceiling for FASCAP applies to each project.
- Project officers don't need to limit a project to a single organization or location.
- Project officers may group related items for the same functional area into a single submission to take advantage of quantity discounts.
- Generate enough savings, directly related to the equipment purchased, to repay all investment costs within the time frame specified in AFPD 38-3:

FASCAP — 2 years,
PIF — 4 years, or
CSIP — 5 years.

- PIF project officers measure the estimated savings at the dollar rate of two years past the current fiscal year.
- CSIP project officers measure the estimated savings at the dollar rate of one year past the current fiscal year.
- Complies with AFI 23-101, *Centrally Managed Equipment*, for nonexpendable investment equipment, if applicable.
- FASCAP equipment must be readily available, off-the-shelf equipment.
- Meets the submitting organization's long-range planning and programming objectives.
- Performs valid functions that existing equipment, facilities, or contractors can't do as economically and effectively.
- Complies with AFI 38-203, *Commercial Activities Program*, when the project involves an expansion, a new requirement, or a conversion from contractor to in-house operation.
- Complies with Air Force policy and guidance on appropriated fund support of nonappropriated fund activities.
- The investment must produce savings in appropriated expenditures to amortize the project.

12.1.2 *Not Qualifying for Funds*

A project does not qualify for funds if it:

- purchases equipment or facilities for business organizations in the Defense Business Operations Fund or
- purchases equipment that private sector or Government organizations currently lease.

EXCEPTION: The leased equipment's remaining "economic life" at the time of purchase is at least 80 percent of a similar new item's economic life and one of these situations applies:

- A command has temporarily leased the equipment to verify the investment's potential to achieve productivity gains.
- A command can gain productivity benefits, besides reducing leasing costs, through improved processes.
- Purchase repair parts or spares under FASCAP.
- Purchase equipment under congressional prohibition or moratorium.
- Purchase equipment or facilities that another budget source has already funded.
- Establish an in-house operation that it can acquire more readily and more economically through commercial contract.
- Invest in government-owned, contractor-operated facilities.

EXCEPTION: The savings to the government can amortize the investment and the contractor concurs with the cost reduction involved.

- For FASCAP, invest in functions undergoing an A-76 cost comparison study.

EXCEPTIONS:

- The project can amortize before a scheduled cost comparison decision.
- MAJCOM PEI managers approve the project contingent on the study resulting in an in-house operation and the project receives funding after an A-76 decision.
- Provides funds to Major Force Program X (support to other nations).

12.1.3 *Prioritizing Projects*

MAJCOM PEI managers prioritize qualified FASCAP projects at their own discretion. The HQ USAF Productivity Office prioritizes PIF and CSIP projects using the following economic factors.

1. Return on investment (ROI).
2. Manpower spaces saved for each dollar invested (that is, investment dollars needed to save the equivalent of one manpower space).
3. Internal rate of return (IRR).

12.1.4 *Identifying Savings*

Savings that project officers use to amortize the project's investment cost must be historically trackable reductions (hard savings) in manpower or O&S costs that the investment has produced.

Project officers must identify all savings (both manpower and dollars) that the project generates to amortize the project. For PIF and CSIP, project officers may use partial manpower savings and dollar or manpower cost avoidance to amortize the investment.

NOTE:

Projects using partial manpower or cost avoidance receive a lower priority in competing for funding if all other factors are equal.

Manpower savings must be whole authorizations or historically documented, civilian overtime expenditures. For PIF and CSIP, project officers may identify manpower authorizations presently programmed for deletion as savings and benefit early from them. These authorizations must:

- Be present on the UMD when the project becomes operational.
- Stay on the UMD long enough to amortize the project (for example, if a manpower authorization is programmed to "come off the books" seven quarters from the approval date, and it is going to take three quarters to buy the equipment and become operational, only four quarters worth of savings are realized).

Project officers pay close attention to projects that use short-term manpower to amortize their equipment to ensure that they produce the savings required. For projects using short-term staffing, project officers, calculate the expected dollar value and show this amount as a one-time savings.

All savings must be auditable. Project officers must keep records according to AFMAN 37-139, *Records Disposition--Standards*. For FASCAP, when projects involve a command-wide buy, each location receiving equipment doesn't need to identify hard savings. That is, the command may delete a manpower position from one participating installation to amortize equipment that the command purchased for multiple locations.

12.1.5 Using Savings

Commands may reinvest savings (dollars and manpower) to satisfy valid unfunded requirements. Commands may reinvest the manpower resources from a completed project to an unfunded requirement when the equipment becomes operational as long as the new requirement is valid.

Commands must return any manpower resources they don't need to satisfy valid unfunded requirements to HQ USAF. HQ USAF reviews reinvested savings when it reassesses priorities for each major program.

12.1.6 Submitting and Implementing Projects

Any organization or unit may submit as many qualified projects as it wants during the fiscal year.

For projects that involve more than one command, the command with the dominant portion of the resource savings submits the project request. The organization submitting the project receives funds through normal budget channels and immediately obligates the funds.

Commands may withdraw funds that bases don't promptly obligate.

Funding for approved projects must be obligated by the end of the fiscal year in which directed. The HQ USAF Productivity Office will take action to withdraw unobligated funds by 31 August.

Once the organization receives funds and begins a project, it uses AF Form 3547 to:

- verify the use of the funds,
- compare benefits predicted to benefits achieved, and
- identify how it plans to use any savings.

Note:

This report carries emergency status code D (discontinue under emergency conditions). MINIMIZE does not apply.

12.1.7 Maintaining a Project File

Organizations use AFI 38-401, *The Air Force Suggestion Program*, to submit a suggestion with a project.

PECI managers and project officers maintain a project file according to AFMAN 37-139, including as a minimum:

- a copy of the PEGI request form incorporating coordination and revisions;
- documentation on project approval;
- documentation on funds they have received and obligated;
- information on how they have made use of manpower savings (if applicable), such as:
 - ◆ approved authorization change requests (ACR),
 - ◆ processed authorization change notices (ACN),
 - ◆ a variance to the manpower standard, and
 - ◆ a copy of AF Forms 3547 incorporating coordination (if applicable);
- documentation of corrective actions they have taken to ensure project amortization (if applicable); and
- for PIF and CSIP, the milestone chart.

12.1.8 *Final PEGI Notes*

The MAJCOM must identify the funding offsets based on the savings you are claiming for an approved PEGI project, so this isn't a "free lunch," but it is an excellent way to accomplish your capital investment objectives. Be patient with the process, because the approval process can get lengthy.

12.2 A-76

More than 30 years ago, the government established a policy that it should rely on, not compete with, the private sector for commercial goods and services. During the interim years, this policy emphasis has gradually changed from almost outright reliance on private sector source to qualified reliance and, finally, to the current policy of competing for performance of government commercial activities with private industry.

12.2.1 *A-76 History*

The first policy directive discouraged agencies from competing with the private sector. Issued in 1955 as Bureau of the Budget Bulletin 55-4, it instructed agencies to rely solely on commercial sources of supply. The relative costs of government operations were to be a factor only in those cases where the agency head concluded that the product or service could not be purchased on a competitive basis and at a reasonable price. The directive communicated the policy:

"Federal Government will not start or carry on any commercial activity to provide a service or product for its own use if such product or service can be procured from private enterprise through ordinary business channels."

Exceptions to the policy were permitted only in specific cases where use of the private sector would not be in the public interest.

In 1967, the policy introduced competition between government-operated commercial activities and the private sector. This policy directed the cost of the function being accomplished by agency employees be compared with the costs of contracting the function to the private sector to see if savings could be realized when the government continued to provide for its own needs. Thus, costs were to be factored into the decision to retain the function in-house or contract out; thereby, modifying the initial concept that it was inappropriate for the federal government to ordinarily compete with private enterprise. The 1967 policy, however, lacked detailed guidance on how agencies were to compare costs with private enterprise.

OMB's 1979 Circular revision further emphasized this cost comparison concept by underscoring that the taxpayer is entitled to efficiency and economy in government operations. To support the increased emphasis on relative cost, detailed guidance was provided to agencies to establish cost comparison consistency. The revision also introduced a new management concept to the federal government. It specified that agencies should define their needs for each commercial activity in terms of measurable performance standards, not in terms of "how" the government does the work and develop a formal measurement system to ensure quality service, whether the government obtains the service with government employees or a private sector contractor. In commenting on a draft of this report, OMB characterized the 1979 revision as providing a more disciplined management approach to government operations.

The current OMB Circular A-76, *Performance of Commercial Activities*, was issued on August 4, 1983. Among other things, the 1983 revision directed that federal organizations make management efficiency studies of their activities to determine the most efficient and effective operation possible, to enable the in-house workforce to be more competitive with private sector contractors.

12.2.2 A-76 Process Overview

The A-76 process has several steps intended to help ensure reliable estimates and allow affected parties an opportunity

to express their views. The process guides agencies in determining whether commercial activities can be done more economically and efficiently by a contractor or an in-house workforce, by requiring the agencies to complete cost studies. Briefly, agencies must:

- identify all activities being done by the government that could be done by non-federal sources and
- schedule those activities for review.

As the initial step in the actual A-76 cost study process, the government must precisely define the performance standards (quality, timeliness, quantity) of the work it is doing and expects to do in the future.

12.2.3 *Performance Work Statement*

These standards are incorporated in a written document called the performance work statement (PWS). The PWS also contains a quality assurance surveillance plan to be used to measure actual contractor performance in the event the contractor wins the competition. Developing a complete, accurate PWS is a very important step in the cost study process, as it is the basis for developing both the in-house cost estimate and contractors' bids. OMB characterized the PWS as the government's new management plan for the service.

12.2.4 *Efficiency Study*

The 1983 Circular revision requires government commercial activities managers conduct management efficiency studies to determine how the in-house workforce must be optimally organized and equipped to most efficiently accomplish the performance standards specified in the PWS. The in-house workforce's most efficient organization (MEO) enables the government workers to be more competitive with private sector contractors in bidding for the work. The government next determines how much it would cost to operate according to the MEO configuration. This cost represents the government's bid to accomplish the commercial activity.

12.2.5 *Comparison of Bids*

When all bids are received, the in-house cost estimate is compared to contractor's bids. A contract for the commercial activity is awarded if three conditions are met:

1. The contractor is judged by the government to be able to meet all of the government's quality, timeliness, and quantity standards.

2. The total cost of contract performance is less than the government's total estimate.
3. The margin of difference by the contractor exceeds ten percent of the government's personnel costs. This ten-percent margin is included in the cost comparison to take into account factors such as a temporary decrease in efficiency and effectiveness, the cost of retained grade and pay, and other unpredictable risks that may occur as a result of the conversion to contract.

*12.2.6 Other Costs
Considered in
Contractors' Bids*

The cost of contract performance includes, in addition to the contractor's bid price, the government's estimated costs of severance pay, of relocating and retraining the government's workers, and of administering the contract. If the conditions listed above are not met, the function will be retained in-house and be done by government workers, who must implement the MEO within six months of winning the bid. Affected parties can file an appeal as a safeguard to help ensure that the decision is equitable and in accordance with A-76 procedures.

*12.2.7 Types of
Commercial
Activities Studied*

DoD has studied a wide variety of commercial activities, from custodial to architecture and engineering services. DoD's studies have concentrated more on facilities, grounds, and utilities maintenance than on any other commercial activity. Experience has shown that studies of base maintenance activities involving multiple functions have produced the largest savings estimates.

*12.2.8 Difficulties in
Doing Studies*

The cost study process often has taken years to complete and reportedly has reduced the morale and productivity of the federal employees whose jobs were at stake. DoD managers have testified that Circular A-76 is micromanagement of their operations and exceedingly disruptive to the labor force. In the long run, however, these managers have viewed A-76 as a worthwhile process for achieving greater efficiencies.

*12.2.9 Time-consuming
Studies*

DoD experience doing cost studies shows that the process is often time-consuming, difficult, and stressful to managers and employees. Since the inception of the A-76 concept, numerous revisions of the policy guidance for implementing A-76, made in part to achieve equity in the cost study process and methodology, have added to the time it takes to complete cost studies.

A common criticism of the program is the studies take too long. On average, it has taken about two years to complete A-76 cost studies and 40 percent have taken more than two years. Furthermore, the individuals whose functions are being studied are tasked to develop the PWS and MEO used to compete their in-house function with private sector competitors. Even when the cost comparison shows that federal employees can provide goods and services at less cost than a contractor operation, data shows an estimated manpower reduction of about 16 percent of the employees in the functions being studied.

12.2.10 *Incomplete PWS* Because the PWS is the basis for developing a MEO and cost comparison, it is important that the government describe its needs as precisely as possible in the PWS. However, preparing PWSs is still a relatively new task for many commercial activities personnel at the installation level. The in-house staff have experienced difficulty precisely defining the standards of performance and quantity of workload that the government activity is providing and expects to provide in the future. Audits have shown that tasks omitted from the PWS were later added to the contract, resulting in increased costs.

In a 1985 report, a sample of 20 DoD functions that were converted to contractor performance were studied. For 12 of the 20 functions, savings were reduced because of contract errors or ambiguities and additional costs resulting from recompeting contracts. Some savings, however, were still realized. Contract errors or ambiguities usually resulted from inadequate statements of work which contractors used as a basis to develop their bids.

12.2.11 *Lessons Learned* Competition in Base Operations Support (BOS) produces savings for the DoD. In the face of competition, cost drops by an average of 27 percent, whether a contractor or the in-house work force wins. If a study of how winners realize savings is conducted, those savings may be duplicated by in-house government activities, even when competition isn't possible.

12.2.12 *In-house Winners* In-house winners of competed BOS functions follow many common approaches to increase their productivity.

- Organizational change, simplifying organizations to reduce the number of supervisors.
- Consolidation of working locations to eliminate the expense of supervising dispersed activities.
- Use of working supervisors who not only direct and schedule workers, but also perform direct labor themselves.
- Use of multi-skilled workers to reduce periodic backlogs with a smaller work force and lower-skilled workers, reserving higher skilled employees for jobs that suit their talents.
- Use of computer support for quicker and more accurate work completion and other equipment, vehicles, and communication to maximize productivity.
- Creation of worker goals and accountability to motivate workers.
- Elimination of unnecessary work, abolishing or modifying nonessential tasks.

12.2.13 Contractor Winners Contractor winners are even more frugal than in-house winners. They rely heavily on overtime, part-time labor, simplified supply procedures, and responsive vehicle and equipment maintenance to further improve productivity. They also tend to pay lower wages to BOS workers than does DoD and are quicker to hire and fire employees.

12.2.14 The Spirit of Competition Competition is the incentive that produces the savings. It is more difficult to produce savings without the pressure of competition, but through wide dissemination of lessons learned, a sizable increase in BOS productivity is possible.

12.2.15 PWS versus AFMS Competition will not always result in a contractor operation. When CE wins the cost comparison, PWS must be the mode of operation, not the AFMS.

If the PWS is done properly, the operation is the most efficient and effective money can buy. The old AFMS was never measured under the MEO method. If the provisions of the PWS are violated, a lawsuit can (and have been) pursued by a previous unsuccessful bidder.

The customers are satisfied under the PWS by involving them in the writing of the PWS from the very beginning.

Attachment 1 List of Acronyms, List of Terms, and References**Acronyms**

A1C	Airman First Class
AB	Airman Basic
ACN	authorization change notice
ACN	authorization change notices
ACR	Authorization Change Request
ACR	authorization change requests
ACR	authorized change request
AD	as determined
ADM	Administration
AEL	academic education level
AF	Air Force
AFB	Air Force base
AFCQMI	Air Force Center for Quality and Management Innovation
AFMEA	Air Force Management Engineering Agency
AFMPC	Air Force Military Personnel Center
AFMS	Air Force Manpower Standards
AFS	Air Force specialty
AFS	Air Force station, no aircraft operating area
AFSC	Air Force specialty code
AMI	assigning MAJCOM identity
AMN	Airman
AMT	authorization amount
ANGT	Air National Guard technician
ANX	annex
APN	associated pass number
APT	airport
ARR	Air Reserve identity
ART	Air Reserve technician
ART	Civil Air Reserve identity
ASC	academic specialty code
ASF	academic specialty code
ASN	air station, air base on foreign territory
AU	Andrews AFB, MD (a CCP)
BCE	base Civil Engineer
BOS	Base Operations Support
CBP	consolidated base personnel office
CCP	central civilian personnel office
CDC	career development course
CE	Civil Engineer
CE	Civil Engineer

CEC	civilian employment category
CECP	civil engineer career program
CEM	chief enlisted manager
CER	Civil Engineer Resources
CIV	civilian
CME	contract manpower equivalents
CMS	Chief Master Sergeant, also CMSgt
CMS	critical military skills
COL	Colonel
CPCN	civilian personnel control number
CPT	Captain
CRR	command manpower remarks
CSIP	Component Sponsored Investment Program
CTY	city
DERA	Defense Environmental Restoration Account
DET	detachment number
DFC	DoD function conversion code
DMBA	depot maintenance business area
DoD	Department of Defense
DSWO	direct scheduled work order
DTY	authorized duty title
EFF	authorization effective date
EUMD	extended unit manpower document
FAC	functional account code
FASCAP	Fast Pay-back Capital Investment Program
FCT	functional category
FHG	family housing
FN	foreign national
FNWZ	Dyess (an ILC)
FYDP	Future Years Defense Plan
G00	General service 00
GOCESS	Government Operated Civil Engineer Supply Store
GRD	authorized grade
GS	general schedule
HPS	personnel reliability program/sensitive compartmented information status
IAP	international airport
ILC	installation location code
ILK	installation kind
IMA	individual mobilization augmentee
INSTL-LOC-NAME	installation location name
IRR	internal rate of return
KSAs	knowledge, skills, and abilities
L00	Wage leader 00
LCOM	logistics composite model
LK	Hansom AFB, MA (a CCP)

DRAFT - NOT FOR IMPLEMENTATION OR COMPLIANCE**Working in the Resources Flight**

LT	Lieutenant
LTC	Lt Colonel
M00	General manager
MAF	man-hour availability factor
MAJ	Major
MAJCOM	major command
MEO	most efficient organization
MES	military essentially
MET	management engineering team
MFH	military family housing
MG	Maxwell AFB, AL (a CCP)
mh	man-hours
MNT	manpower type
MO	manpower and organization office
MQ	Manpower and Quality office
MSG	Master Sergeant
MSI	manpower standard implementation
NR-KD-TYP	number, kind, and type
O&S	operations and support
OCC	occupational series
OF	overload factor
OJT	on-the-job training
OPM	Office of Personnel Management
OSC	organization structure code
PAA	primary aircraft authorized
PAL	personnel accounting level
PAS	personnel accounting symbol
PD	position description
PD	position description
PDO	Publishing Distribution Office
PDSC	Personnel Data System - Civilian
PEC	program element code
PECI	Productivity Enhancing Capital Investment
PEP	promotion evaluation pattern
PIF	Productivity Investment Fund
PNQS	Maxwell (an ILC)
POS-NR	position number
PPBS	planning, programming, and budgeting system
PPP	priority placement program
PRP	personnel reliability program
PRT	port, ships discharge cargo
PSC	PAS security classification
PSR	PAS classification reason
PWS	performance work statement
RAF	Royal Air Force station

RGR	required grade
RIF	reduction in force
RLA	authorized language required
RMR	manpower remarks
ROI	return on investment
RPI	rated position identifier
RSA	knowledge, skill, and ability
RSC	commercial/in-house contract services reasons
S00	Wage supervisor 00
SABER	Simplified Acquisition Base Engineering Requirements
SAR	security access requirements
SCH	school
SEI	special experience identifier
SES	senior executive
SMS	Senior Master Sergeant
SrA	senior airman
SSg	staff sergeant, also SSgt
STG	storage (other than ammo, no depot function)
SUB	sub-command identity
TRU	authorization through date
TSG	Technical Sergeant
UAF	unit authorization file
UCPR	civilian personnel roster
UDC	installation or location indicator
UMD	Unit Manpower Document
UMD	unit manpower document
UMPR	unit military personnel roster
USAF	United States Air Force
USDH	United States direct hire
UTC	unit type codes
W00	Wage grade 00
WC	wing commander
WE	Wright-Patterson AFB, OH (a CCP)
WG	wage grade
WIMS	Work Information Management System
WL	wage leader
WLF	workload factor
WS	wage supervisor
YLR	year of last review
YNR	year of next review
ZHTV	Wright-Paterson (an ILC)

Resources

AFCAT 36-2223, *USAF Formal Schools*

AFI 23-101, *Centrally Managed Equipment*
AFI 38-203, *Commercial Activities Program*
AFI 38-204
AFI 38-401, *The Air Force Suggestion Program*
AFMAN 36-2108, *Airman Classification*
AFMAN 37-139, *Records Disposition - Standards*
AFMAN 38-208, *Air Force Management Engineering Program (MEP)*
AFMS 42B1, *Vehicle Maintenance*
AFMS 44ER, *Manpower Standards*
OMB Circular A-76, *Performance of Commercial Activities* (1983)